

SCALERS AND SIGNAL PROCESSORS

DVS 605 HDCP-Compliant Scaler (with Seamless Switching)



DVS 605



DVS 605 AD



Extron® Electronics
INTERFACING, SWITCHING AND CONTROL

Precautions

Safety Instructions • English



This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.



This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Consignes de Sécurité • Français



Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).



Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

Attention

Lire les instructions • Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conservé les instructions • Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Éviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Sicherheitsanleitungen • Deutsch



Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.



Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits- und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Instrucciones de seguridad • Español



Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.



Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

Precaución

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean específicamente recomendados por el fabricante, ya que podrían implicar riesgos.

安全须知 • 中文



这个符号提示用户该设备用户手册中有重要的操作和维护说明。



这个符号警告用户该设备机壳内有暴露的危险电压，有触电危险。

注意

阅读说明书 • 用户使用该设备前必须阅读并理解所有安全和使用说明。

保存说明书 • 用户应保存安全说明书以备将来使用。

遵守警告 • 用户应遵守产品和用户指南上的所有安全和操作说明。

避免追加 • 不要使用该产品厂商没有推荐的工具或追加设备，以避免危险。

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Avvertimento

Alimentazioni • Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation • Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden.

Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdschluß, und stellt eine Sicherheitsfunktion dar. Dieses sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stromversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitz und Öffnungen • Wenn das Gerät Schlitz oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearla ni eliminarla.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgos de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalentamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

警告

电源 • 该设备只能使用产品上标明的电源。设备必须使用有地线的供电系统供电。第三条线（地线）是安全设施，不能不用或跳过。

拔掉电源 • 为安全地从设备拔掉电源，请拔掉所有设备后或桌面电源的电源线，或任何接到市电系统的电源线。

电源线保护 • 妥善布线，避免被踩踏，或重物挤压。

维护 • 所有维修必须由认证的维修人员进行。设备内部没有用户可以更换的零件。为避免出现触电危险不要自己试图打开设备盖子维修该设备。

通风孔 • 有些设备机壳上有通风槽或孔，它们是用来防止机内敏感元件过热。不要用什么东西挡住通风孔。

锂电池 • 不正确的更换电池会有爆炸的危险。必须使用与厂家推荐的相同或相近型号的电池。按照生产厂的建议处理废弃电池。

FCC Class A Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. The Class A limits provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference; the user must correct the interference at his own expense.

NOTE: This unit was tested with shielded I/O cables on the peripheral devices. Shielded cables must be used to ensure compliance with FCC emissions limits. For more information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the “[Extron Safety and Regulatory Compliance Guide](#)” on the Extron website.

Conventions Used in this Guide

Notifications

CAUTION: A caution indicates a situation that may result in minor injury.

NOTE: A note draws attention to important information.

Software Commands

Commands are written in the fonts shown here:

```
^ARMerge Scene, ,Op1 scene 1,1 ^B 51 ^W^C  
[ 01 ] R 0004 00300 00400 00800 00600 [ 02 ] 35 [ 17 ] [ 03 ]
```

```
Esc X1 * X17 * X20 * X23 * X21 CE ←
```

NOTE: For commands and examples of computer or device responses mentioned in this guide, the character “0” is used for the number zero and “O” represents the capital letter “o.”

Computer responses and directory paths that do not have variables are written in the font shown here:

```
Reply from 208.132.180.48: bytes=32 times=2ms TTL=32  
C:\Program Files\Extron
```

Variables are written in slanted form as shown here:

```
ping xxx.xxx.xxx.xxx -t  
SOH R Data STX Command ETB ETX
```

Selectable items, such as menu names, menu options, buttons, tabs, and field names are written in the font shown here:

```
From the File menu, select New.  
Click the OK button.
```

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Trademarks

All trademarks mentioned in this guide are the properties of their respective owners.



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Introduction

This manual contains information about the Extron DVS 605 scalers with instructions for experienced installers on how to install, configure, and operate the equipment.

In this manual the terms “DVS,” “digital video scaler,” and “scaler” are used interchangeably and refer to any DVS 605 model.

DVS 605 Series Description

The DVS 605 series of digital video scalers is comprised of:

- DVS 605, standard model
- DVS 605 A, with audio switching
- DVS 605 D, with 3G/HD-SDI output
- DVS 605 AD, with 3G/HD-SDI output and audio switching

All models are full rack, and are available with optional 3G/HD-SDI outputs (DVS 605 D and DVS 605 AD) and balanced/unbalanced audio (DVS 605 A and DVS 605 AD).

All models are high performance video scalers that include three HDMI inputs, two universal analog video inputs, and simultaneous HDMI and analog high resolution outputs. The DVS 605 models accept a wide variety of video formats including HDMI with HDCP, HDTV, RGB, and standard definition video. They feature advanced Extron video signal processing with 1080i de-interlacing, Deep Color processing, and true seamless switching for professional-quality presentations. The DVS 605 models offer flexible control options including Ethernet, RS-232, USB, hardwired IR, and contact closure.

The five inputs of all DVS 605 models accommodate a variety of sources. The analog inputs can automatically detect and process RGB computer-video, HDTV, component video, S-video, and composite video. The DVS 605 provides the capability to integrate digital and analog video devices, with HDCP compliance to enable integration of Blu-Ray Disc players and cable or satellite HD receivers. Auto-switching between inputs streamlines system operation as well as integration with presentation switchers or matrix switchers.

Output scan rates are available from VGA (640x480) to UXGA (1600x1200) resolution, as well as HDTV at 720p, 1080i, 1080p/60 Hz, and 2k/60Hz.

NOTE: See the [Resolution and Refresh Rate table](#) on page 17 for a complete list.

The DVS 605 models feature EDID Minder® and Key Minder®. EDID Minder automatically manages Extended Digital Identification Data (EDID) communications between the display device and all the HDMI and VGA computer-video input sources.

For HDMI signals with protected content, Key Minder authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments.

DVS 605 models with audio switching feature HDMI audio embedding and de-embedding. Any input audio signal can be embedded onto the HDMI output. DVS 605 audio models can also extract embedded HDMI audio to analog and digital S/PDIF outputs. The DVS 605 AD, with audio switching plus 3G-SDI/HD-SDI output, can embed up to eight channels of audio onto the SDI output.

Licensed Third-party Software Used in the DVS 605

The DVS 605 uses various licensed third-party software during operation. To view details about third-party packages and associated licensing, click the **License Information** button on the Unit Information page of Default web pages (see [Unit Information Page section](#) on page 85). The DVS 605 License Information dialog box opens.

To view a copy of a listed package license, in the dialog box, click the link in the License column for the relevant package. This opens in a separate window a copy of the package license.

Click **Close** to close the dialog box.

The table below lists the licensed third-party software used by the DVS 605.

NOTE: Licensed third-party software used by the DVS 605 is subject to change without notice.



Licensed Third-party Software Used in the DVS 605			
Package	License	Package	License
avahi	GNU LGPL v2.1	libpng	libpng license
bstrib	BSD	lighttpd	BSD
busybox	GNU GPL v2	Linux	GNU GPL v2
bzip2	BSD	lua	MIT
cjson	MIT	lua-cjson	MIT
expat	BSD	luafilesystem	MIT
ExtJS4	Sencha Commercial License	luasocket	MIT
fcgi	fcgi	luastruct	MIT
freetype	Free Type License	mtd	GNU GPL v2
gnupg-1.4.7	GNU LGPL v2.1	ncurses	MIT
gpgme	GNU LGPL	openssh	BSD
ifplugd	GNU GPL	openssl	OpenSSL
jpeg	libjpeg	PAM	BSD
libassuan	GNU LGPL	pcre	BSD
libgcc 3.2.3	GNU LGPL v2.1	psmisc	GNU GPL v2
libcurl	ICS	qt	GNU LGPL v2.1
libdaemon	GNU GPL v2.1	socat	GNU GPL v2
libdnet	BSD	spawn-fcgi	BSD
libgpg	GNU GPL v2.1	sqlite	Public Domain
libcap	BSD	xinetd	Custom
net-snmp	BSD		

Key Features

Video Inputs

- Three HDMI inputs and two universal auto-detecting analog video inputs — The two universal 15-pin HD inputs automatically detect incoming RGB, HD component video, YUVi, S-video, or composite video signals. The DVS 605 allows for seamless switching between HDMI and analog video sources.
- Auto input format detection — For the universal analog video inputs, the DVS 605 detects the incoming signal format, automatically reconfiguring the scaler to provide the appropriate decoding and signal processing.
- Auto-switching between inputs — The DVS 605 can automatically switch between input sources. With auto-switching, the DVS 605 can accommodate additional inputs when connected to the outputs of a larger presentation switcher, or can be used for unmanaged switching, or upstream matrix switcher.
- True seamless switching — Seamless cut and dissolve transition effects are available for inputs 1 to 4. Input 5 features glitch-free switching with a fade through black.

Video Outputs

- Simultaneous scaled outputs for HDMI, HD-SDI, and analog RGB or HD component video — HDMI and high resolution analog RGB or component video outputs are available for driving two displays.
- Selectable output rates from 640x480 to 1920x1200, including HDTV 1080p/60 Hz — Available output rates include computer video up to 1920x1200, HDTV rates up to 1080p/60Hz, and 2048x1080 (2k/60Hz).
- Picture-in-picture (PIP) — For inputs 1 to 4, the DVS 605 provides unrestricted two-window display of standard definition and high resolution digital and analog video sources. Multiple PIP presets are available, including side-by-side windows. The main and PIP windows can be dynamically sized, positioned, and magnified. In audio models, audio switching can be set to follow either the main or PIP window.

Audio

- Audio switching — The DVS 605 A and DVS 605 AD feature audio switching for five analog stereo balanced or unbalanced inputs.
- Output volume control — DVS 605 audio models provide master volume control. Fixed and variable line level outputs are available, and each output can be balanced or unbalanced. Stereo input signals can be output as dual mono. The DVS 605 audio models also include a S/PDIF digital audio output.
- Audio input gain and attenuation — Gain or attenuation can be adjusted for each analog audio input to eliminate noticeable differences when switching between sources.
- Audio breakaway — Provides the capability to break an audio signal away from its corresponding video signal and route to the audio outputs, allowing the analog audio channels to be operated as a separate switcher.
- Audio switching transitions — A transition technique can be applied during switches that lowers the audio of the switched-out source while simultaneously bringing up the audio of the activated source. The duration of the audio crossfade matches the duration of the video switching transition.

- Integrated audio delay — The audio output is automatically delayed to compensate for latency introduced by the video processing. An additional audio delay can also be adjusted to a user defined setting.
- HDMI audio embedding and de-embedding — For DVS 605 models with audio, analog input audio signals can be embedded onto the HDMI output signal. The DVS 605 can also extract PCM embedded HDMI audio signals. Encoded bitstream audio for Dolby® Digital or DTS® Digital Surround a can be passed to the HDMI and S/PDIF outputs.

General

- HDCP compliance — features include data rates up to 6.75 Gbps, Deep Color, and HD lossless audio formats.
- HDCP authentication and signal presence confirmation via RS-232 or Ethernet — The DVS 605 provides real-time verification of HDCP status for each digital video input and output. This allows for signal and HDCP verification through USB, RS-232, or Ethernet, providing feedback to a system operator or helpdesk support staff.
- HDCP visual confirmation provides a green signal when encrypted content is sent to a non-compliant display, providing immediate visual confirmation that protected content cannot be viewed on the display.
- Key Minder continuously verifies HDCP compliance for quick, reliable switching. It authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching while enabling simultaneous distribution of a single source signal to one or more displays.
- Advanced scaling engine — The DVS 605 features a high performance 30-bit scaling engine with the ability to scale high resolution computer-video and HDTV as well as standard definition video up or down in resolution.
- EDID Minder automatically manages EDID communication between connected devices, ensuring all sources power up properly and reliably output content for display.
- AFL™ - Accu-RATE Frame Lock — A patented technology exclusive to Extron that eliminates image tearing caused by frame rate conversion.
- Image freeze control — A live image can be frozen using control via USB, RS-232 serial, Ethernet, or IR control.
- Auto-Image™ setup — When activated, the unit automatically detects the resolution of the incoming video signal and sets the total pixels, active pixels, and active lines, as well as the horizontal and vertical starting points.
- Auto Input Memory — When activated, the DVS 605 automatically stores size, position, and picture settings based on the incoming signal. When the same signal is detected again, these image settings are automatically recalled from memory.
- On-screen display — The DVS 605 features an on-screen display which displays status information of the currently selected input.
- On-screen input labels — An on-screen text label may be assigned to each input. The label can be up to 16 characters and input via RS-232 or Ethernet.
- Power screen saver mode and standby modes — The DVS 605 can be set to automatically mute video and sync output to the display device when no active input signal is detected. This allows the projector or flat-panel display to automatically enter into standby mode to save energy and enhance lamp or panel life.

- Picture controls for brightness, contrast, color, tint, and detail, as well as horizontal and vertical positioning, and sizing — 16 user memory presets are available for each input to store all image settings.
- Automatic 3:2 and 2:2 pulldown detection — The DVS 605 offers advanced film mode processing techniques that help maximize image detail and sharpness for NTSC, PAL, and HDTV 1080i sources that originated from film.
- Motion adaptive 1080i and SD de-interlacing — The DVS 605 provides high performance de-interlacing for 1080i and standard definition signals from sources including cable or satellite set-top boxes, delivering optimized image quality through advanced motion compensation.
- Aspect ratio control — The aspect ratio of the video output can be controlled by selecting a Fill mode, which provides a full screen output, or a Follow mode, which preserves the original aspect ratio of the input signal.
- Quad standard video decoding — The DVS 605 uses a digital, 3D adaptive comb filter to decode NTSC 3.58, NTSC 4.43, PAL, and SECAM for integration into systems worldwide.
- Internal test patterns for calibration and setup — The DVS 605 offers 14 test patterns, including a crop pattern, crosshatch, 16 bar grayscale, color bars, alternating pixels, ramp, white field, 4 x 4 crosshatch, and four aspect ratio patterns – 1.33, 1.78, 1.85, and 2.35.
- Optional 3G/HD-SDI output with Genlock that complies with SMPTE 292M and 424M, and ITU digital video standards. Genlock allows synchronization to an external reference signal for integration into broadcast and production applications
- Front panel security lockout — This feature locks out all front panel functions except for input selection; all functions however, are available through USB, RS-232, or Ethernet control.
- Hardwired IR connection — The DVS 605 features a rear panel hardwired IR port for connection to Extron MediaLink® Controllers, IP Link® Control Processors, or IR receivers for additional control flexibility.
- Ethernet monitoring and control — The DVS 605 can be controlled and pro-actively monitored over a LAN, WAN, or the Internet. An intuitive web interface is included for setup and control.
- RS-232 control port — Using serial commands, the DVS 605 can be controlled and configured via the Extron Windows®-based control program, or integrated into a control system. Extron products use the SIS™ - Simple Instruction Set command protocol, a set of basic ASCII code commands that allow for quick and easy programming.
- Front panel USB configuration port — Enables easy configuration without having to access the rear panel.
- Contact closure ports — Can be used for external control of source switching.
- Rack-mountable 1U, full rack width metal enclosure
- Includes LockIt® HDMI cable lacing brackets
- Internal universal power supply — The 100-240 VAC, 50-60 Hz, international power supply provides worldwide power compatibility.

Controlling the DVS 605

All DVS 605 Series units can be controlled using one or more of the following methods:

- The front panel controls.
- A computer, a touch screen panel, or any other device that can send and receive serial communications through the USB, RS-232 or Ethernet port. The Extron Simple Instruction Set (SIS) is a set of simple keystroke commands that can be used with any such devices.
- The Extron Windows-based DVS 605 Configuration Software Program provides a graphical interface for controlling the scaler from a computer.
- Embedded web pages provide a web browser based interface for controlling the scaler from a computer over a LAN network
- Hardwired IR.
- Ethernet control via IP Link, enabling the scaler to be controlled and actively monitored over a LAN, WAN, or the Internet.

Rear Panel Connections

This section describes how to connect cables to a DVS 605 scaler.

Rear Panel Cabling

The illustration below shows all the possible rear panel features of the audio (DVS 605 A and DVS 605 AD) and the non-audio (DVS 605 and DVS 605 D) models.

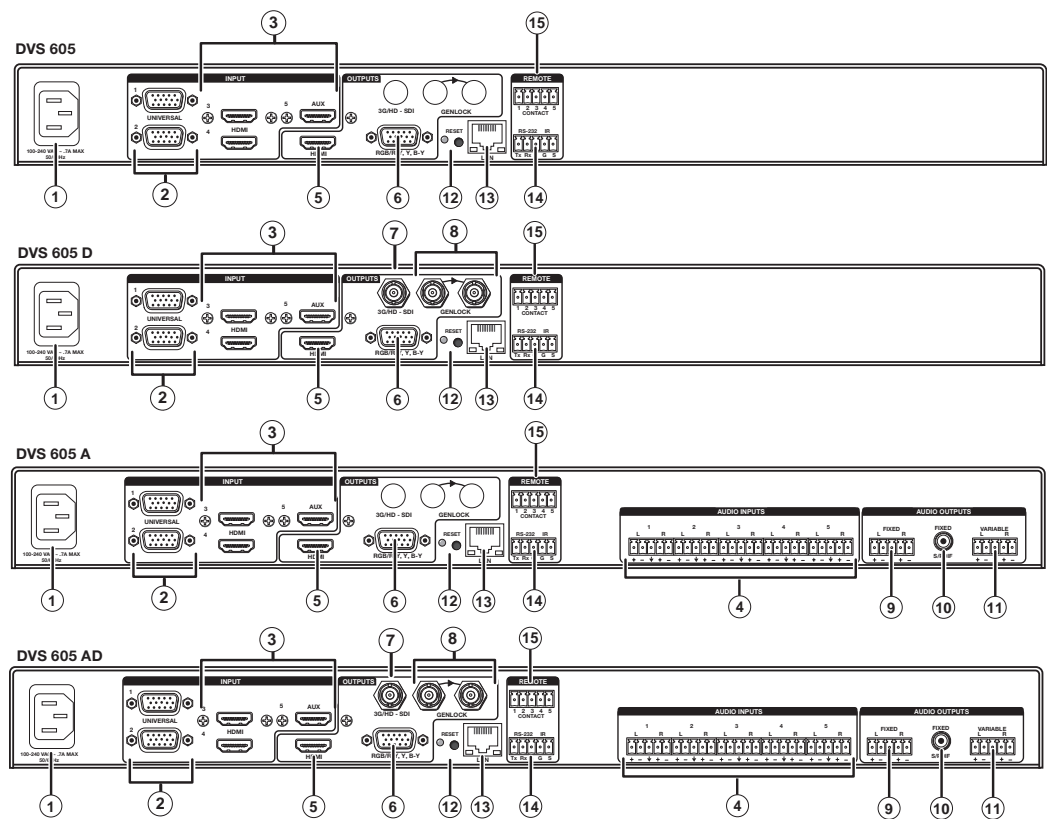
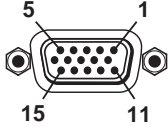


Figure 1. DVS 605 Rear Panel Features — All Models

Power and video input connections	Output and control connections	
<ul style="list-style-type: none"> ① AC power connector ② Universal analog VGA connectors — inputs 1 and 2 ③ HDMI connectors — inputs 3-5 (Note: PIP is not available on input 5) ④ Audio 5-pole captive screw connectors — inputs 1- 5 (audio models only) 	<ul style="list-style-type: none"> ⑤ HDMI connector ⑥ RGB/R-Y,Y, B-Y component VGA connector ⑦ 3G/HD-SDI connector (optional) (SDI models only) ⑧ Genlock connectors — input and loop (SDI models only) ⑨ Audio output (fixed), 5-pole captive screw connector (audio models only) ⑩ RCA audio (S/PDIF) output connector (audio models only) 	<ul style="list-style-type: none"> ⑪ Audio output (variable), 5-pole captive screw connector (audio models only) ⑫ Reset button and LED ⑬ RJ-45 LAN connector ⑭ RS-232 and IR 5-pole captive screw connector ⑮ Contact closure 5-pole captive screw connector (shares a ground with RS-232)

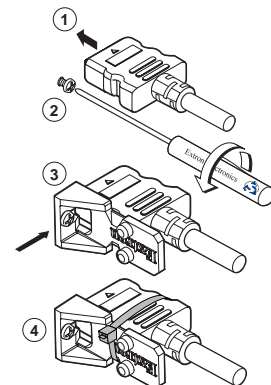
- ① **Power input** — Connect the standard IEC power cord from a 100 to 240 VAC, 50-60 Hz power source into this connector. The front panel control and input selection buttons light in sequence during power-up.
- ② **Inputs 1 and 2** — Connect suitable inputs to these two universal analog input ports (15-pin HD [VGA] connectors) for auto-detection of RGB, HD component video, YUVi, S-video, or composite video signals.
These universal analog input ports can be configured to accept RGB (RGBHV, RGBs), component video (bi- or tri-level), S-video, or composite video signals. The default setting is for auto detect. The table below shows the pinouts for each format type on the 15-pin HD (VGA) connector. The 15-pin HD supports EDID emulation.

Pinout Table for 15-pin HD Connector					
Pin	RGBHV	RGBs	Component	S-video	Composite
1	Red	Red	R-Y		
2	Green	Green	Y	Luma	Video
3	Blue	Blue	B-Y	Chroma	
4	No Connection	No Connection			
5	No Connection	No Connection			
6	Red Return	Red Return	R-Y Return		
7	Green Return	Green Return	Y Return	L Return	Video Return
8	Blue Return	Blue Return	B-Y Return	C Return	
9					
10	Ground	Ground			
11	No Connection	No Connection			
12	EDID/DDC	EDID/DDC			
13	H Sync	C Sync			
14	V Sync				
15	EDID/DDC	EDID/DDC			

- ③ **Inputs 3 to 5** — Connect HDMI sources to these three HDMI connectors. Audio from the HDMI inputs can be de-embedded from the HDMI source. This allows the user to choose to select audio either from the HDMI inputs or the analog audio captive screw inputs. Once an audio source is selected, the unselected source is disabled. The default selection is 2-channel digital audio from the HDMI inputs.

Connect up to three digital HDMI and DVD-D inputs to the HDMI connectors ③. Connect DVI-D sources using an adapter cable and secure the connectors to the DVS using the LockIt™ bracket as follows:

1. Plug the HDMI cables into the panel connections.
2. Loosen the side HDMI connection mounting screw from the panel enough to allow the LockIt lacing bracket to be placed over it.
3. Place the LockIt lacing bracket onto the screw and slide it up against the HDMI connector. Tighten the screw to secure the bracket.
4. Loosely place the included tie wrap around the HDMI connector and LockIt lacing bracket.



5. While holding the connector securely against the lacing bracket, tighten the tie wrap, then remove any excess length.

The LockIt bracket can also be used in a stacked formation, as shown below.

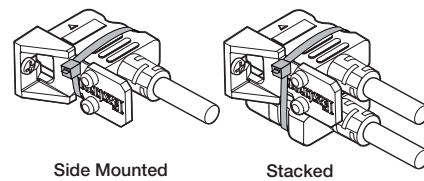


Figure 2. LockIt Bracket Mounting Options

- 4 **Audio inputs 1-5 (audio models only)** — Connect audio sources to these 5-pole, captive screw connectors. Wire the connector for line level, balanced or unbalanced, analog stereo as shown below.

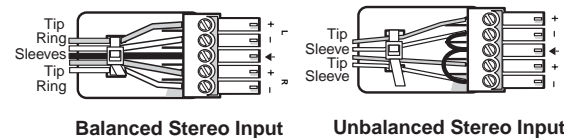


Figure 3. Audio Input Connector Wiring

NOTE: Control signal ground pins are labeled "G". Audio ground pins are as ▼. The wiring and function are the same, whichever way your product is labeled.

- 5 **HDMI output** — Connect an HDMI display device to this HDMI connector.
- 6 **RGB or HD component (R-Y, Y, B-Y) 15-pin HD video output** — Connect an RGB video display or HD component video display to this HD 15-pin connector.

NOTE: Simultaneous identical scaled outputs for HDMI and analog RGB or HD component video are available.

- 7 **Optional 3G-SDI/HD-SDI output connector** — Connect an SDI (serial digital interface) display to this female BNC connector for SDI output. This complies with SMPTE 292M and 424M and ITU video digital standards.
- 8 **Genlock connector and loop through (SDI models only)** — Connect an external reference signal for synchronization of the SDI output. The loop through can be used to synchronize additional devices.
- 9 **Audio output (fixed, audio models only)** — Connect audio output devices to this 5-pole, captive screw connector for line level, balanced or unbalanced, analog stereo. Wire the connectors as shown below.

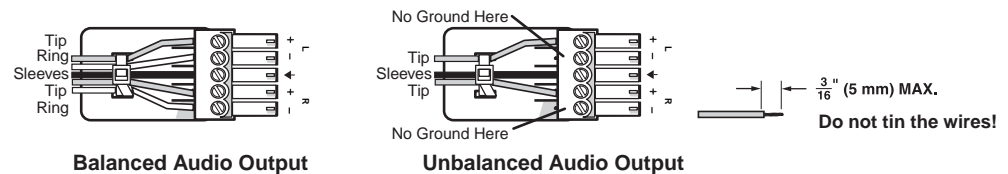


Figure 4. Audio Output Connector Wiring

- 10 **RCA audio output (S/PDIF, fixed, audio models only)** — Plug in an S/PDIF audio output device into this female RCA connector. This connector outputs digital S/PDIF audio formats (2-channel LPCM, Dolby Digital, or DTS).

- ⑪ **Audio output (variable, audio models only)** — Connect audio output devices to this 5-pole, captive screw connector for line level, balanced or unbalanced, analog stereo. Wire the connectors as shown below.

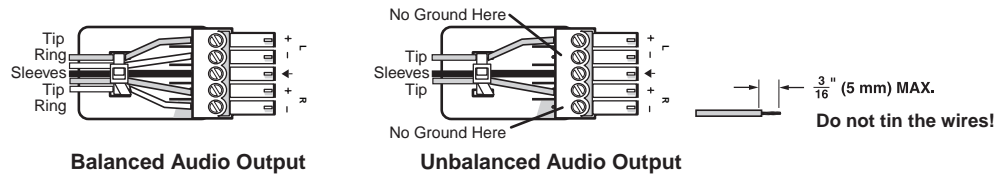


Figure 5. Audio Output Connector Wiring

- ⑫ **Reset button and LED** — Using an Extron Tweezer, pointed stylus, or ballpoint pen, press this recessed button for manual resets. The unit has four modes of reset (see “Resetting the Unit” later in this guide for additional information). The green LED flashes to show the reset mode indicators and that power is on.

- ⑬ **LAN connector** — Plug an RJ-45 jack into this socket to connect the unit to a computer network. Use a patch cable to connect to a switch, hub, or router. Wire the connector as shown below.

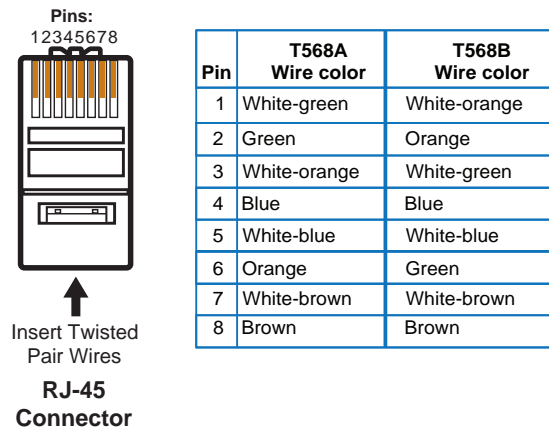


Figure 6. RJ-45 LAN Connector Wiring

LAN Activity LED — A blinking yellow LED indicates LAN activity.

Link LED — The green LED lights to indicate a good LAN connection.

- ⑭ **RS-232/IR port** — For serial RS-232 control, connect a host computer or control system to the 5-pole captive screw connector. Is also a hard wired IR control for use with an external IR controller. The default protocol is 9600 baud, 1 stop bit, no parity, 8 data bits, no flow control. By default the IR port is disabled.

- ⑮ **Remote contact closure port** — For remote input selection of any of the five inputs, connect a suitable contact closure control device to this 5-pole captive screw connector. The contact closure port and the RS-232 port share a common ground.

Operation

This section of the manual discusses the operation of a DVS 605 device, and is divided into four sections:

- [Front Panel Overview](#)
- [Powering Up](#)
- [The DVS 605 Menu System — Configuration and Adjustments](#)
- [Front Panel Lockout \(Executive Modes\)](#)
- [Picture-in-Picture \(PIP\) Mode](#)
- [Resetting the Unit](#)

Front Panel Overview

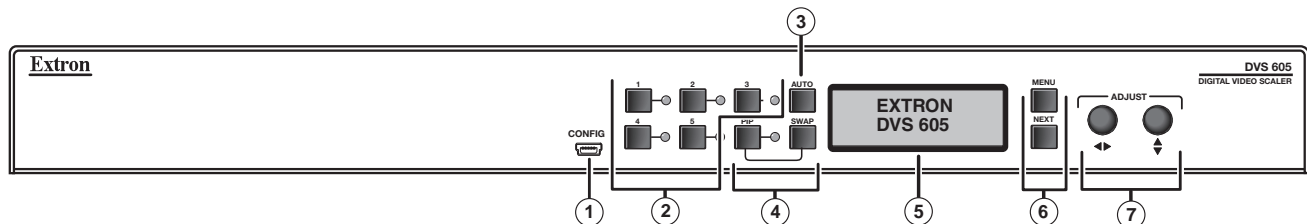


Figure 7. DVS 605 Front Panel Features

- ① **Front Panel mini USB configuration port** — Connect a control system or computer to this mini USB port for device configuration, control, and firmware upgrades.
- ② **Input selection buttons and LEDs (1-5)** —
Input LEDs — The LED of the selected input lights when the button is pressed. A blinking LED indicates an audio breakaway input (audio models only).
Inputs 1 and 2 (universal input buttons) — Input 1 and 2 select Auto detect, RGB scaled (RGBHV, RGBS, RGsB), Auto-YUV, RGBcvs, S-video, and Composite video inputs.
Inputs 3, 4, and 5 (HDMI/DVI buttons) — Inputs 3, 4, and 5 select the HDMI/DVI input signals.
- ③ **Auto-Image button** — Use this to start an Auto-Image function which automatically sizes and centers an input signal.
- ④ **PIP (Picture-In-Picture) button and Swap Image button** — The PIP button enable or disables the PIP mode. The Swap button allows the user to swap the two current inputs displayed in the main and PIP windows.
- ⑤ **LCD display** — Displays configuration menus and status information. See the “[The DVS 605 Menu System — Configuration and Adjustments](#)” section for details
- ⑥ **Menu Navigation buttons (Menu and Next)** —
Menu — Use this button to enter and move through the main menu system.
Next — Use this button to step through the submenus of the scaler menu system. See the “[The DVS 605 Menu System — Configuration and Adjustments](#)” section.
- ⑦ **Adjustment knobs (horizontal ◀▶ and vertical ⬆⬇)** — When using the menu system, rotate either of these two knobs to scroll through the menu options and to make any adjustments.

Powering Up

When applying power to the DVS 605, the unit undergoes a start-up self testing sequence (see image below) and then the LCD displays the default display cycle.

Default Display Cycle

When in use but not in any menu mode, the LCD screen defaults to cycling through the input/output configuration currently installed. The displayed content may vary, depending on the input video signal type. See figure 8 for a typical default display cycle.

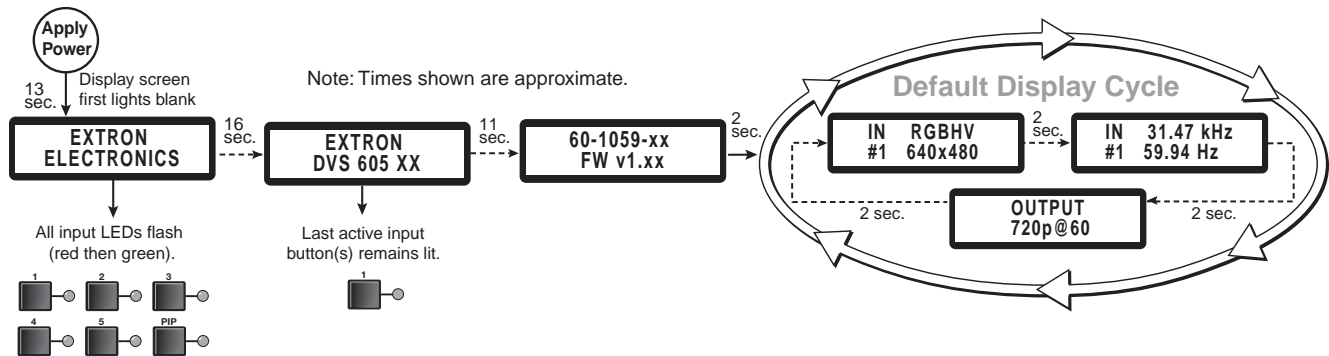


Figure 8. Typical default display cycle

The default display cycle shows the scaler output rate and refresh rates for the currently selected input.

The DVS 605 Menu System — Configuration and Adjustments

Scaler configuration and adjustments can be performed by using the embedded web pages (see “Using Default Web Pages” section), the Windows-based control program (see the “Extron Configurator” section), the Extron Simple Instruction Set (SIS™) of commands (see the “SIS Communication and Control” section), or by using the front panel controls and the menus displayed on the DVS unit’s LCD screen. These menus are used primarily when the scaler is first set up.

Menu Navigation Using Front Panel Controls

Menu button — Press the Menu button to activate menus and scroll through the eight main menus.

Next button — Press the Next button to move between the submenus of a selected main menu item.

Adjust (◀▶, ⬆⬇) knobs — In configuration mode, rotate the Adjust horizontal (◀▶) knob and Adjust vertical (⬆⬇) knob to scroll through submenu options and to make adjustment selections. See the flowcharts in this chapter for explanations on knob adjustments.

Menu Overview

After start-up, and when no adjustments are actively being made, the “default cycle” appears on the LCD. The screens cycle between the screen that shows the active input’s number and video format and the current output resolution.

Pressing the Menu button once brings up the first of eight main (top level) menus, as shown below. Each successive press of the menu button goes to the next main menu.

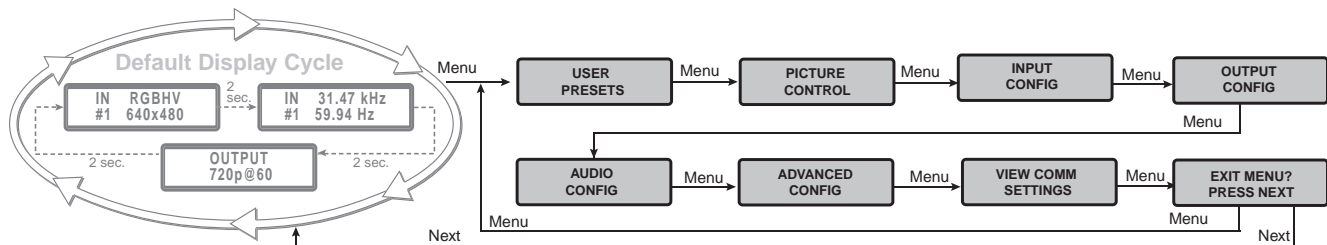


Figure 9. Top Level Menus

A fourth default cycle menu appears only when genlock is enabled. [See the Genlock status](#) section (page 17) for details.

NOTE: From any menu or submenu, after 20 seconds of inactivity the DVS will save all adjustment settings and time-out to the default cycle.

The flowchart shown on the following page provides an overview of the complete menu system, with configuration submenus and the options for each setting. In the flow charts the use of “x”, (for example in (x) or Inx) indicates an input number.

Use the Menu button to scroll between top level menus and press Next to enter the submenu.

NOTE: If no signal is present on the currently selected input, NO SIGNAL appears in place of the input type, for example, INPUT 4 NO SIGNAL.

Details of each of the menus are on subsequent pages.

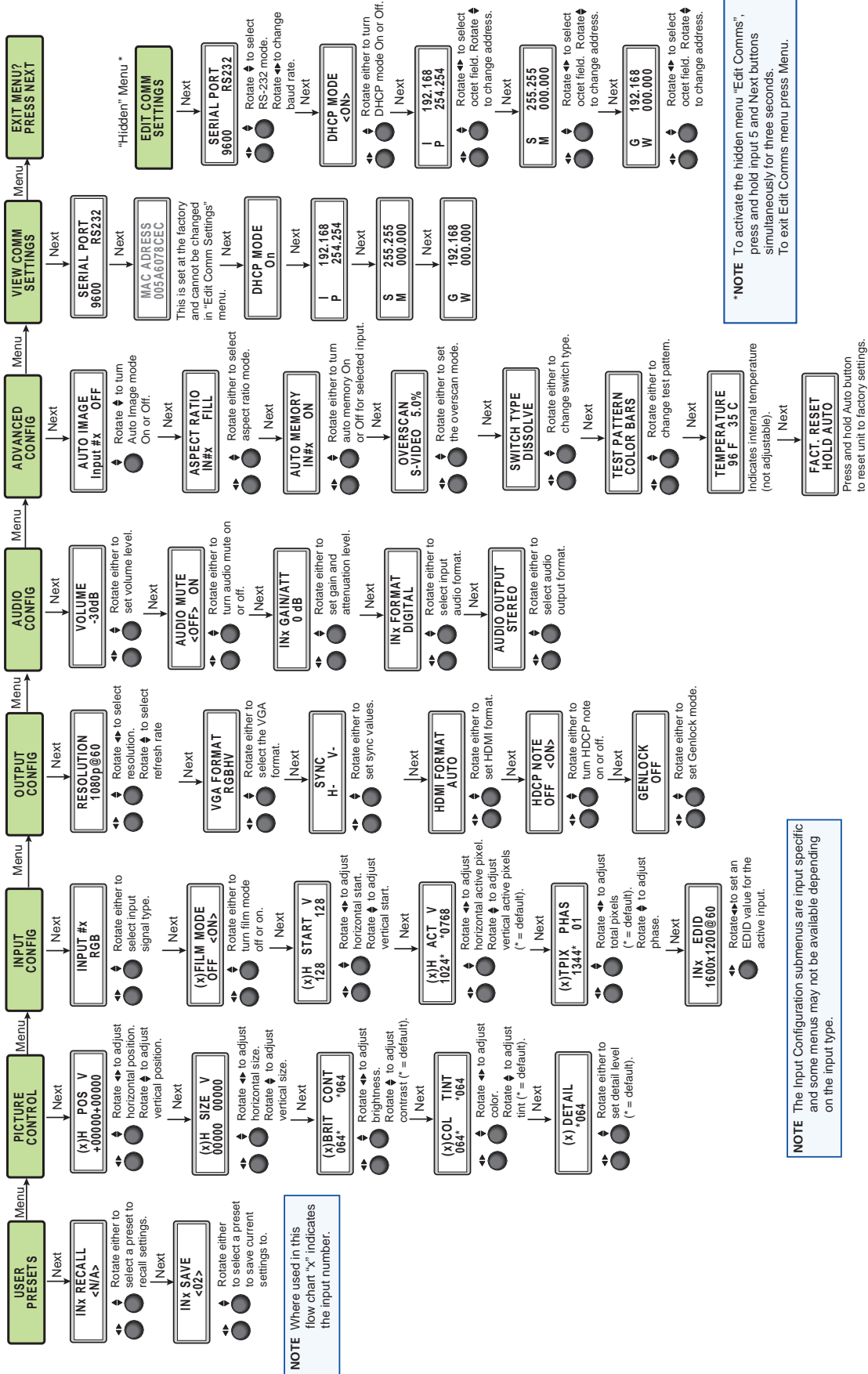


Figure 10. Main Menu

To return to the default cycle form within any menu, press the Menu button repeatedly until the Exit menu appears, then press the Next button. Alternatively, allow the DVS 605 to time-out (after 20 seconds).

Submenus are accessed from a main menu by pressing the Next button. When within a submenu, press the Menu button to go out of the submenu and back to the active main menu.

User Presets

This menu allows the user save or recall up to 16 presets for the selected input, shown as INx on the LCD screen.

To use this menu press Next to get the relevant submenu, Recall or Save.

When within the submenu use the adjust knobs to select the preset to save or recall.

Press menu to exit the submenu.

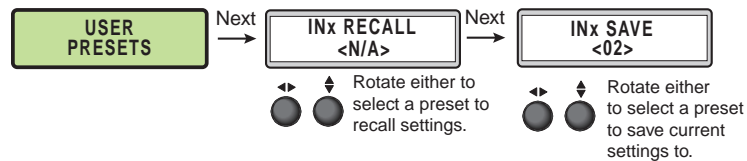


Figure 11. User Preset Menu

Picture Control

This menu allows the user to adjust various picture control settings such as horizontal and vertical window positioning, horizontal and vertical window size, brightness and contrast, color and tint, and detail settings for the selected input. The selected input is shown as (x) on the LCD screen.

To use this menu press Next to get the relevant submenu.

When within the submenu use the adjust knobs to select and then adjust the values as desired.

Press menu to exit the submenu.

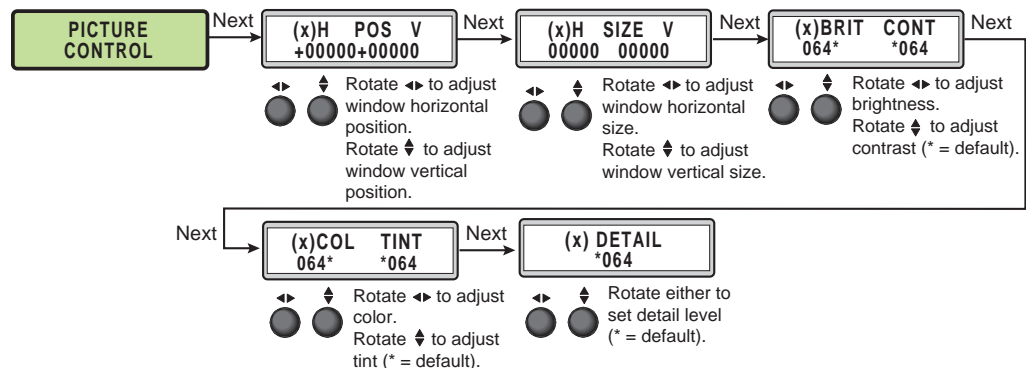


Figure 12. Picture Control Menu

Input Configuration

This menu allows the user to adjust various input configuration settings such as; video signal type, film mode, horizontal and vertical start position, horizontal and vertical active pixels, total pixel number, phase, and EDID settings for the selected input. The selected input is shown as (x) on the LCD screen images.

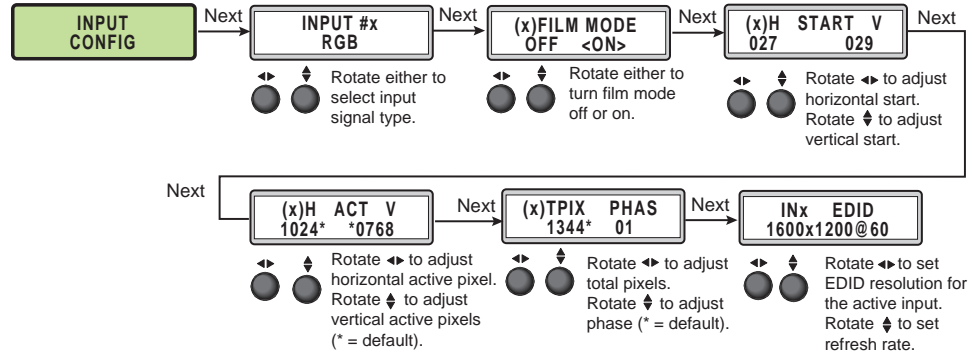


Figure 13. Input Configuration Menu

NOTE: Only inputs 1 and 2 offer selectable video types.

Input video types

Rotate either the Adjust horizontal (◀▶) or Adjust vertical (⬆) knob while in any of the Input submenus to select the appropriate video format.

Input 1

Input 1 is a universal analog input for RGB scaled, Auto YUV, RGBcvs, S-video and composite video.

When input 1 is set to YUV Auto, the scaler detects if YUVi or YUVp/HDTV is applied and sets the input accordingly.

It can also be set to auto detect the incoming input signal type. This is the default setting.

Input 2

Input 2 is a universal analog input for RGB scaled, Auto YUV, RGBcvs, S-video and composite video.

When input 2 is set to YUV Auto, the scaler detects if YUVi or YUVp/HDTV is applied and sets the input accordingly.

It can also be set to auto-detect the incoming input signal type. This is the default setting.

Inputs 3-5

Input 3 through 5 are digital inputs for HDMI/DVI input signals.

Output Configuration

The output configuration menu allows selection of; output resolution and refresh rates, analog output types (RGBHV, RGBS, RGsB and Y, B-Y, R-Y), sync polarity, HDMI format, HDCP notification display, Genlock setting.

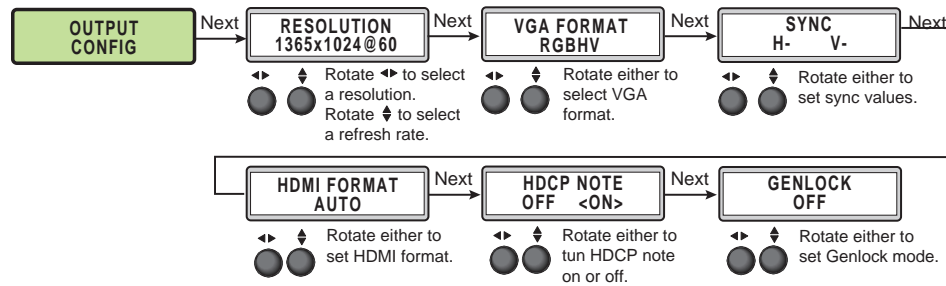


Figure 14. Output Configuration Menu

Resolutions and Refresh Rates

Rotate the horizontal (◀▶) knob to select a resolution, and the vertical (⬆⬇) knob for refresh rates. The default resolution and rate is 720p/60 Hz.

There are also 5 custom, user-defined/captured rates available (C1 - C5). When no rate is captured or uploaded to any of the 5 custom slots, they default to 720p/60 Hz.

Resolution	23.98 Hz	24 Hz	25 Hz	29.97 Hz	30 Hz	50 Hz	59.94 Hz	60 Hz	75 Hz
Custom 1 through 5	For captured or uploaded EDID tables								
640 x 480						X		X	X
800 x 600						X		X	X
852 x 480						X		X	X
1024 x 768						X		X	X
1024 x 852						X		X	X
1024 x 1024						X		X	X
1280 x 768						X		X	X
1280 x 800						X		X	X
1280 x 1024						X		X	X
1360 x 765						X		X	X
1360 x 768						X		X	X
1365 x 768						X		X	X
1366 x 768						X		X	X
1365 x 1024						X		X	X
1440 x 900						X		X	X
1400 x1050						X		X	
1600 x 900						X		X	
1680 x 1050						X		X	
1600 x 1200						X		X	
1920x1200						X		X	
480p							X	X	
576p						X			
720p			X	X	X	X	X	X	
1080i						X	X	X	
1080p	X	X	X	X	X	X	X	X	
2k	X	X	X	X	X	X	X	X	

When a new custom rate has been captured or uploaded, the On-Screen-Display (OSD) dynamically updates with the new rate for that custom slot. For example if a custom 480p EDID is uploaded to slot C1, the LCD would read "C1: 720x480". These five custom slots are shared between custom output resolutions (based on preferred timings 1 block) and custom EDID tables, which can be assigned to any DVS input.

Analog Output Format

Using either the Adjust horizontal (◀▶) or Adjust vertical (⬆️) knob, select the output video format required by the display: RGBHV (default); RGBS; RGsB; YUV bi-level and YUV tri-level.

Sync Polarity

Some display devices may require a particular combination of horizontal (H) and vertical (V) sync signal polarities. Select the appropriate combination of positive or negative H and V sync by rotating either the Adjust horizontal (◀▶) or Adjust vertical (⬆️) knob.

NOTE: If the output format was specified as RGsB or YUV, or RGBS, this submenu will not be displayed because this menu is only applicable for RGBHV.

HDMI Format

Using either of the Adjust knobs (◀▶ ⬆️), select the HDMI format as follows:

- Auto — (based on sink EDID), default
- DVI RGB 444
- HDMI RGB 444 FULL (0-255, audio, InfoFrames)
- HDMI YUV 444 FULL (0-255, audio, InfoFrames)
- HDMI YUV 444 LIMT (16-235, audio, InfoFrames)
- HDMI YUV 422 FULL (0-255, audio, InfoFrames)
- HDMI YUV 422 LIMT (16-235, audio, InfoFrames)

HDCP Notification

The HDCP Notification provides a means of determining if HDCP content restrictions are preventing a video signal from passing. By default, a green screen with moving "HDCP CONTENT" text is displayed on the output if the connected sink device is not HDCP compliant, and an HDCP input (main or PIP) has been selected. The notification OSD and green screen can be disabled (mute to black), or enabled (green screen) via the front panel menu.

Use either of the Adjust knobs (◀▶ ⬆️), to turn HDCP notification on or off.

Genlock status

Genlock can be enabled via the front panel menu system. When active this locks the output vertical refresh rate to the selected input signal vertical refresh rate, or to an applied SDI genlock signal (SDI models only).

When using the SDI genlock, the output rate of the DVS 605 MUST be set to match the applied SDI genlock reference signal, for example 1080i at 59.94 Hz

NOTE: When set for input signal lock, a glitch in output sync may be experienced when switching between DVS 605 inputs as the scaler locks to the input reference.

If either genlock mode is enabled, but no genlock or reference input signal is being applied to the scaler, the DVS 605 defaults to an internally generated vertical refresh rate that matches the current output resolution setting.

Use either of the Adjust knobs (◀▶ ⬆️⬇️), to turn genlock off, set to Input signal, or set to SDI genlock (where applicable).

When genlock is enabled a fourth default cycle menu appears.

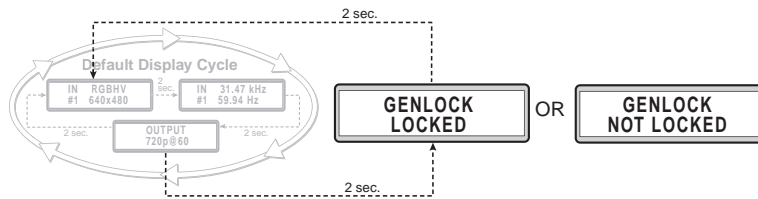


Figure 15. Fourth Default Display Item — Genlock Menu

This menu is only visible when genlock is enabled.

Audio Configuration (All Models)

Audio Configuration allows the user to set volume level (0 dB to -100 dB range), turn audio mute on or off, adjust input gain and attenuation levels (-53 dB to +9 dB range) for the current analog input. It also allows selection of an input audio format (none, analog, 2-channel digital, full digital, 2-channel auto, or full auto), and the audio output type (stereo or dual mono) which can be adjusted for each input.

NOTE: Volume level and input gain and attenuation adjustments are only available on audio models (DVS 605 A and DVS 605 AD).

- For analog inputs 1 and 2, the choice of input audio format is analog or none.
- For non-audio models format selection for inputs 3 through 5 is limited to none, 2-channel digital, or full digital.
- For inputs 3, 4, and 5, when in auto mode, digital audio is used when present. If no digital audio is present it defaults to analog audio.

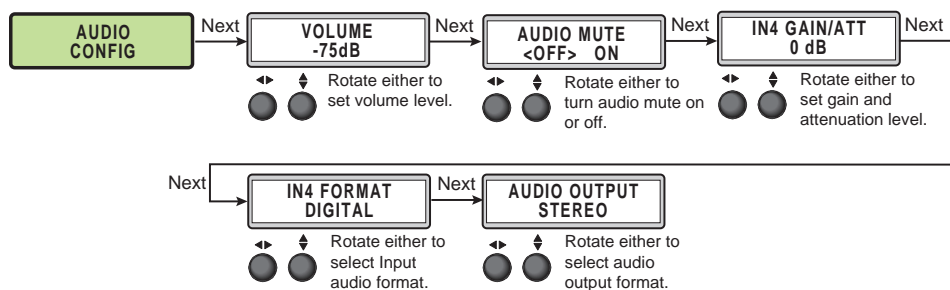


Figure 16. Audio Configuration Menu

Use the Next button to scroll to the applicable submenu, and user both Adjust knobs (◀▶ ⬆️⬇️) to change the settings as needed.

Input audio format	Description
None	All audio for the input is muted: 128 byte EDID (VGA/DVI) is presented to the source.
Analog	5-pole captive screw connector is used for audio input: 128 byte EDID (VGA/DVI) is presented to the source.
2-channel digital	256 byte EDID (HDMI) is presented to the source requesting 2CH PCM audio.
Full digital	256 byte EDID (HDMI) is presented to the source allowing for all digital audio formats.
NOTE: DVS 605 analog audio outputs are only active if analog or PCM audio is detected on HDMI inputs 3,4 and 5.	
2-channel auto	256 byte EDID (HDMI) is presented to the source requesting 2CH PCM audio. If digital audio is not present this automatically defaults to the 5-pole captive screw analog audio input.
Full auto	256 byte EDID (HDMI) is presented to the source allowing for all digital audio formats. If digital audio is not present this automatically defaults to the 5-pole captive screw analog audio input.

Advanced Configuration

The following flowchart provides an overview of the Advanced Configuration submenu. The options are; Auto-Image (on or off), aspect ratio (fill or follow), auto memory (on or off), overscan (none, 2.5%, and 5.0%), switch type (dissolve or cut), test patterns (see table below), temperature (device reading only) and factory reset.

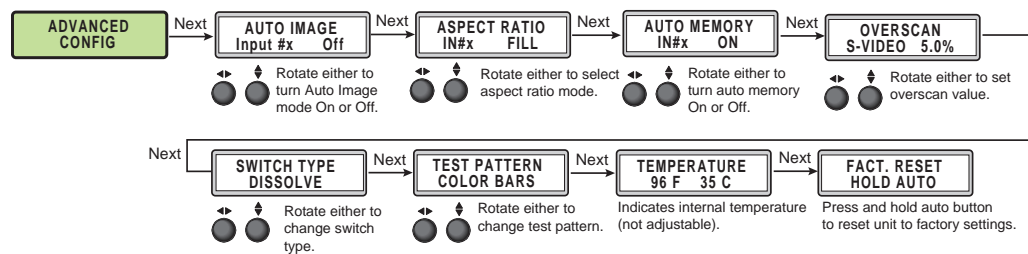


Figure 17. Advanced Configuration Menu

Aspect Ratio

Use either Adjust knob (◀▶) to set the aspect ratio to Fill or Follow.

The aspect ratio setting is per input, and allows the user to select between each input signal filling the entire output raster (Fill - default setting), or for each input rate to be displayed with its native aspect ratio (Follow) ratio (4:3, 5:4, 15:9, 16:9, 16:10) with the correct letter box or pillar box settings visible under the Image Size and Image Position Picture Controls.

When in the Fill mode, if an aspect ratio adjustment for a single input rate is desired, the correct size and center can be set up using Image Size and Image Position under Picture Controls, using one of the aspect ratio test patterns for a template. If auto memory is enabled, then these settings are saved and recalled the next time the signal is detected.

The DVS 605 clears the previous size and position settings whenever the aspect ratio setting for an input is adjusted.

NOTE: Unique SIS commands can set the device to Auto-Image and Fill or Auto-Image and Follow, regardless of the current aspect ratio.

Auto-Image™

Use either Adjust knob (◀▶ ⚡) to turn Auto-Image on or off (default).

When enabled and a new input frequency is detected, the DVS first applies an existing Auto Memory for the signal (if Auto Memory is enabled), or if no entry exists, performs an automatic Auto-Image on the new signal. This automatically attempts to size/position the image to fill the screen, with respect to the current Aspect Ratio setting.

With Auto-Image disabled, the DVS 605 will apply default values to a new input if no Auto Memory exists (if Auto Memory is enabled).

Auto Memory

Use either Adjust knob (◀▶ ⚡) to turn Auto Memory on (default) or off.

The DVS 605 stores 32 auto memories per input, with input configuration and picture control data for each input. The default settings enable these memories to automatically recall input and picture controls for signals that have been previously applied. When auto memories are disabled, the DVS treats every newly applied input as a new source. Default for Auto Memory is on.

How Auto Memory and Auto-Image Interact		
Auto Memory	Auto-Image	Information
On	On	"New" signals/rates that have not been previously detected by the DVS are initially set up using default parameters, then Auto-Image is automatically applied and values stored. The next time that signal is detected, the values stored in the auto memory location are applied.
On (Default)	Off (Default)	"New" signals/rates that have not been previously detected by the DVS are set up using default parameters. If manual input and/or picture settings are made to the input, an auto memory location is created and recalled each successive time the input is detected.
Off	On	Each change in input sync, input switch, or power cycle triggers an automatic Auto-Image. When auto memory is disabled, each change in sync is treated as a new signal and an automatic Auto-Image is triggered. Any manual changes made to the image and picture controls are lost each time a new rate is detected.
Off	Off	Each change in input sync causes default values to be applied to the rate. Any manual changes made to the image and picture controls are lost when a new rate is applied.

Figure 18. Auto Memory and Auto-Image Details

Overscan

Use the horizontal Adjust knob (◀▶) to select input video type (RGB, YUV, RGBcvs, S-video, composite, or HDMI), and the vertical Adjust knob (⚡) to select the overscan mode (None, 2.5% or 5.0%).

Overscan is specific to each input signal type. This zooms and crops SMPTE inputs to mask edge effects and ancillary data that are common in broadcast signals. Issuing an Auto-Image with overscan enabled, runs an Auto Phase routine (YUV and RGB only) and centers and sizes the input according to table values.

NOTE: Overscan is valid only on SMPTE input rates (NTSC, PAL, 480p, 576p, 720p, 1080i, or 1080p).

Switch

This option enables a video switch transition (cut or dissolve) when switching between inputs.

Use either of the Adjust knobs (◀▶ ⬥) to select the switch type as desired.

NOTE: Input switches between input 4 and input 5 use a fade through black transition.

Test pattern

The built-in test patterns are useful for calibrating a display to the DVS 605 output. Choose a test pattern such as crop, alternating pixels, and color bars to adjust the image.

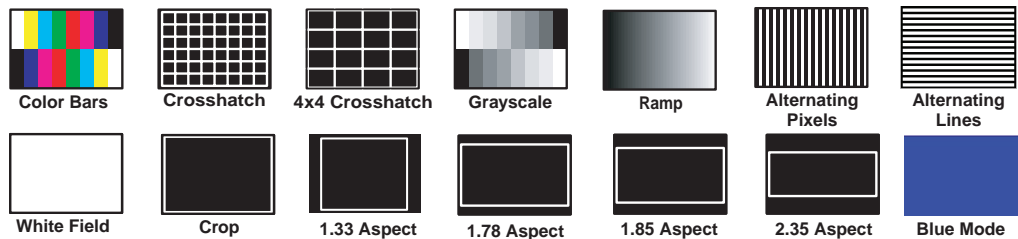


Figure 19. Test Pattern Choices

- **Alternating Pixels** — Used to calibrate display devices input sampling to the device output. Use this pattern to adjust the clocking and phasing at the display until no more vertical bands are visible.
- **Crop** — Used to center the output on the display device: adjust H and V to center the display until all four crop lines are visible.
- **Color Bars** — Used to calibrate color settings on the display and to confirm proper system wiring.
- **Blue Mode** — This assists the user in setting up the color and tint levels

Use either the Adjust horizontal (◀▶) or Adjust vertical (⬥) knob to select a test pattern. The default state is “Off”.

Temperature

This is a read-only menu and gives the internal temperature (degrees C and F) of the connected device. No adjustments can be made.

Factory Reset

This menu allows the user to reset the device to the factory default settings.

Press and hold the Auto-Image button until the display changes. Release and press Auto-Image again to confirm that a reset is desired. The device will be reset.

View Comm Settings

The current RS-232 and IP settings are read-only with this menu. To make any setting adjustments, the “hidden” Edit Comm Settings menu must be accessed (see below).

Press Next to go through each sublevel to view the following: Serial port (baud rate and communication type), MAC address (cannot be changed), DHCP status (on or off), IP address, Subnet mask, and Gateway address.

NOTE: To enter the “hidden” Edit Comms Settings menu, press and hold in the input 5 and Next buttons simultaneously. The Edit Comms Settings menu appears.

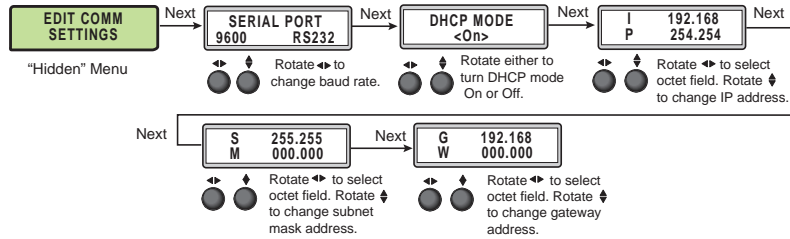


Figure 20. Edit Comm Settings Menu

Exit Menu

From this submenu, press the Menu button to return to the User Presets menu cycle, or press the Next button to exit the menu and return to the default cycle.

Front Panel Lockout (Executive Modes)

To prevent accidental changes to settings, press the Menu and Next buttons simultaneously for 2 seconds to enable front panel lockout mode (executive mode 2).

The menu system returns to the default menu within 10 seconds.

Executive mode 2 locks all front panel functions except input switching, PIP enable and PIP swap, and Auto-Image. Menu and Next buttons and the Adjust knobs are disabled.

When executive mode 2 is active, all functions and adjustments can still be made through USB, RS-232, or Ethernet control. For details on remote control, see “SIS Communications and Control”.

To disable executive mode 2, press the Menu and Next buttons simultaneously for 2 seconds. See the flowchart below.

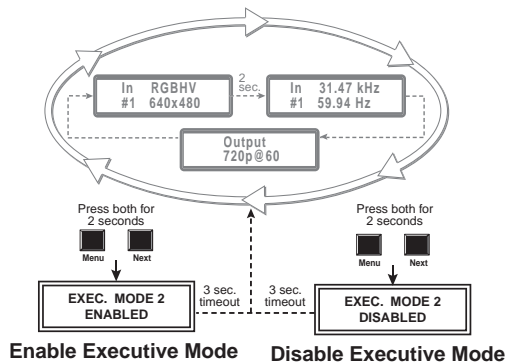


Figure 21. Front Panel Lockout

Executive mode 1 locks all front panel functions completely. This mode can be enabled or disabled by SIS commands only.

Picture-in-picture (PIP) Mode

The DVS 605 can display two images on the screen simultaneously.

The PIP window can be activated using front panel PIP button, discrete SIS commands, PIP presets, device embedded web pages, or the Extron Configurator Program. See “SIS Communication and Control”, or “Using the Default Web Pages”, or “Using the Extron Configurator Program” for details.

NOTE: Input 5 is not available for PIP mode.

Front Panel Activation

When the PIP window is enabled

- the front panel PIP LED lights red
- the PIP input LED lights red.
- the input LED for the main window lights green.

NOTES:

- Inputs 1 through 4 can be used in any combination for PIP mode.
- Input 5 is not selectable for PIP operation.
- Attempting to activate PIP mode while input 5 is selected results in the input 5 LED blinking red/green for one second — LCD reads “IN5 PIP NOT AVAILABLE”.
- Attempting to select input 5 for the PIP input while PIP mode is active results in the input 5 LED flashing red/off for one second — LCD reads “IN5 PIP NOT AVAILABLE”.
- When in PIP mode, audio breakaway is not supported. Audio follows either the main window or the PIP window, and is selectable via SIS command.

To start picture-in-picture mode:

1. Select an input for the main window input signal. The LED lights green.
2. Press the PIP button. The LED lights red, and the LED for input 1 or 2 lights red.
3. Select another input as the PIP input, as desired. The corresponding LED lights red.

While the PIP mode is active, all front panel input selection, input configuration, and picture control adjustments will affect the PIP window only.

When PIP is activated from the front panel, or via SIS command (not using PIP presets), the DVS will automatically set up the last PIP layout with sizing and centering for the main window, main image, PIP window, and PIP image. On a new unit, or after a reset, the DVS defaults to the layout saved in PIP Preset #1

The inputs in the windows can be swapped using the front panel Swap button or a single SIS command. See “SIS Communication and Control” for command details.

To swap between PIP and Main inputs:

Press the Swap button. The input for the main window now becomes the new PIP input and the LED changes from green to red. The previous PIP input becomes the new main window input and the LED changes from red to green.

When PIP mode is not active, the Swap button swaps the current main input with the previously selected main input.

PIP Presets

A PIP preset contains settings for the size and position of PIP and the main and PIP inputs that were active when the preset was saved. PIP presets are used to quickly recall a group of settings that relate to the main and PIP windows and content settings. 16 global PIP presets are available for the DVS 605.

A set of 10 factory default layouts exist and can be overwritten by saving new presets. PIP presets can only be restored to factory defaults and not deleted.

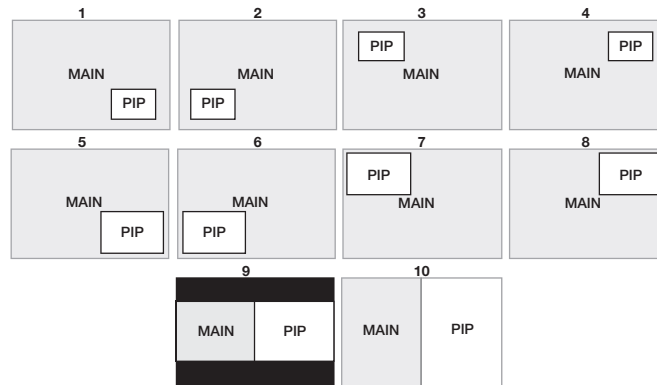


Figure 22. Default Main and PIP Window Layouts

A PIP preset can be created and saved using SIS commands, embedded web pages or the Extron Configurator Program. See “SIS Communication and Control”, or “Using the Default Web Pages”, or “Using the Extron Configurator Program” for details.

PIP presets save the main and PIP inputs that were active when the preset was saved.

PIP presets can be recalled with or without inputs.

Presets				
Setting	Input Presets	User Presets	PIP presets	Auto Memory
Horizontal/Vertical start	Yes			Yes
Active Pixels	Yes			Yes
Active Lines	Yes			Yes
Total Pixels	Yes			Yes
Phase	Yes			Yes
Brightness and Contrast	Yes	Yes		Yes
Color and Tint	Yes	Yes		Yes
Detail	Yes	Yes		Yes
Input Type	Yes			
Audio Gain and Attenuation	Yes			
Main window size and position	Yes	Yes		
PIP window size and position			Yes	
Preset name	Yes	Yes	Yes	
Main Input			Yes	
PIP input			Yes	
Film Mode	Yes			
Presets Available	128 Global	32 per input channel	16 per input channel	16 global
Recall Location	Any input supporting input type saved in preset	Automatically recalled based in incoming signal	Current input	Any input except input 5

Resetting the Unit

There are four unit reset modes (numbered 1, 3, 4, and 5), These are available by pressing the recessed Reset button on the rear panel with a pointed stylus, pen, or similar item to access it. See the following table for a summary of the reset modes.

CAUTION: Review the reset modes carefully. Using the wrong reset mode may result in unintended loss of flash memory programming, port reassignment, or processor reboot.

NOTE: The reset modes listed close all open IP and Telnet connections and all sockets. Each mode is a separate function, not a continuation from mode 1 to mode 5.

DVS 605 Reset Mode Summary				
	Mode	Activation	Result	Purpose and Notes
Use Factory Firmware	1	Hold down the recessed Reset button while applying power to the unit.	The unit reverts to the factory default firmware: a) Reverts to the factory default firmware for a single power cycle. b) All user files and settings (drivers, audio and video adjustments, IP settings, etc.) are maintained. All user files and settings (such as drivers, adjustments, and IP settings) are maintained.	Use mode 1 to revert to the factory default version if incompatibility issues arise with user-loaded firmware.
	NOTE: After a mode 1 reset is performed, update the firmware of the unit to the latest version. Do not operate the device firmware version that results from the mode 1 reset. This temporarily resets the unit to factory default until power is recycled. If you want to use the factory default firmware, you must upload that version again.		NOTE: If you do not want to update firmware, or you performed a mode 1 reset by mistake, cycle power to the unit to return to the firmware version that was running prior to the mode 1 reset. Use the OQ SIS command to confirm that the factory default firmware is no longer running (look for asterisks following the version number).	
Run/Stop Event Scripts	3	Hold down the Reset button for about 3 seconds until the LED blinks once, then release and press Reset momentarily (<1 second) within 1 second*.		
Reset All IP Settings	4	Hold down the Reset button for about 6 seconds until the LED blinks twice (once at 3 seconds, again at 6 seconds). Then, release and press Reset momentarily (for <1 second) within 1 second*.	a) Sets port mapping back to factory default b) Turns DHCP ON c) Reset LED flashes four times in quick succession during reset.	Mode 4 resets all IP settings back to factory defaults.
Reset to Factory Defaults	5	Hold down the Reset button for about 9 seconds until the LED blinks three times (once at 3 seconds, again at 6 seconds, again at 9 seconds). Then, release and press Reset momentarily (for <1 second) within 1 second*.	a) Mode 5 performs a complete reset to factory defaults except the firmware. b) Do everything mode 4 does. c) Reset all user modifiable configuration to default values including IP settings and real-time adjustments. d) Delete all user loaded files. e) The Reset LED flashes 4 times in quick succession during the reset.	Mode 5 is useful if you want to restart with default configuration. Equivalent to SIS command ZQQQ
NOTE: *For modes 3, 4, and 5, nothing happens if the momentary press does not occur within 1 second				

Figure 23. Reset Mode Comparison

SIS Communication and Control

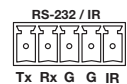
The DVS 605 can be configured and controlled via a host computer or other device (such as a control system) attached to the rear panel RS-232 connector or the LAN port or the front panel USB port. Control is made using the Extron Simple Instruction Set (SIS) of commands, or the DVS 605 Configuration Software Program, or the DVS default web pages.

Commands can be entered using a Telnet application such as the Extron DataViewer, available at www.extron.com. See the DataViewer Help file for use.

This section describes SIS communication and control. Topics that are covered include:

- [Host to Scaler Communications](#)
- [Commands and Responses](#)

The scaler uses a protocol of 9600 baud, 1 stop bit, no parity, and no flow control and the rear panel RS-232 captive screw connector has the pin assignments as shown.



Host to Scaler Communications

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command sequence. When the DVS 605 determines that a command is valid, it executes the command and sends a response to the host device. All responses from the scaler to the host end with a carriage return and a line feed (CR/LF = **↵**), indicating the end of the response character string (one or more characters).

Scaler-initiated Messages

When a local event such as a front panel selection or adjustment takes place, the DVS 605 scaler responds by sending a message to the host. No response is required from the host. Example scaler-initiated messages are listed here.

- **↵** © Copyright 2012, Extron Electronics, DVS 605, Vx.xx, 60-1059-01 **↵** Thur, 17 February 2012 11:27:33 **↵** The DVS 605 sends the copyright message when it first powers on. Vx.xx is the firmware version number.
- In **[x]** All **↵** (where **[x]** is the input number during an input switch).
- Reconfig **↵** The DVS 605 sends this response when an input is switched or when a new signal is detected.

Copyright Information

↵ © Copyright 2012, Extron Electronics, DVS 605, Vx.xx, Fri, 17 Feb 2012 11:27:33 **↵**

The copyright message is displayed upon connecting to an DVS product via TCP/IP or Telnet. Vx.xx is the firmware version number. The current date and time are displayed. This is followed by a Password prompt if a password has been set.

Password Information

The **← Password:** prompt requires a password (administrator level or user level) followed by a carriage return. The prompt is repeated if the correct password is not entered.

If the correct password is entered, the unit responds with **← Login Administrator ←** or **← Login User ←**, depending on password entered. If passwords are the same for both administrator and user, the unit defaults to administrator privileges.

Error Responses

When the DVS 605 receives a valid command, it executes the command and sends a response to the host device. If the unit is unable to execute the command because the command contains invalid parameters, it returns an error response to the host.

Error Numbers

E01 — Invalid input number	E17 — Invalid command for signal type
E06 — Invalid switch attempt in this mode	E22 — Busy
E10 — Invalid command	E24 — Privilege violation
E11 — Invalid preset number	E25 — Device not present
E12 — Invalid port number	E26 — Maximum number of connections exceeded
E13 — Invalid parameter	E28 — Bad filename/file not found
E14 — Not valid for this configuration	

Error Response References

- ¹⁴ = Commands that give an E14 (invalid command for this configuration) error if sent to a product whose current configuration does not support the command
- ²⁴ = Commands that give an E24 (privilege violation) error if not administrator level
- ²⁸ = Commands that may give an E28 (file not found) error

Commands and Responses

Using the Command and Response Tables

The command and response table for SIS commands later in this chapter lists the commands that the DVS 605 scaler recognizes as valid, the responses that are returned to the host, a description of the command's function or the results of executing the command, and an example of each command in ASCII (Telnet) and URL encoded (web).

NOTE: Upper and lower case text can be used interchangeably.

ASCII to HEX Conversion Table										Esc 1B	CR 0D	LF 0A		
Space 20	!	21	"	22	#	23	\$	24	%	25	&	26	'	27
(28	)	29	*	2A	+	2B	,	2C	-	2D	.	2E	/	2F
0 30	1	31	2	32	3	33	4	34	5	35	6	36	7	37
8 38	9	39	:	3A	;	3B	<	3C	=	3D	>	3E	?	3F
@ 40	A	41	B	42	C	43	D	44	E	45	F	46	G	47
H 48	I	49	J	4A	K	4B	L	4C	M	4D	N	4E	O	4F
P 50	Q	51	R	52	S	53	T	54	U	55	V	56	W	57
X 58	Y	59	Z	5A	[	5B	\	5C	]	5D	^	5E	_	5F
` 60	a	61	b	62	c	63	d	64	e	65	f	66	g	67
h 68	i	69	j	6A	k	6B	l	6C	m	6D	n	6E	o	6F
p 70	q	71	r	72	s	73	t	74	u	75	v	76	w	77
x 78	y	79	z	7A	{	7B	|	7C	}	7D	~	7E	DEL	7F

Figure 28. ASCII to Hexadecimal Character Conversion Table

Symbol Definitions

• = Space

↵ = Carriage return with line feed

| or ← = Carriage return with no line feed

Esc or W = Escape

^{14, 24, 28} = Superscripts indicate the error message displayed if the command is entered incorrectly or with invalid parameters. See “Error Response References”.

x1 = Input selection, 1-5, (0 = current input — 0 valid only for Input Config settings:
0 = main when PIP is disabled, 0 = PIP when PIP is enabled)

x2 = Output selection:
0 = All outputs (default)
1 = Analog (VGA, YUVp, HDTV)
2 = HDMI
3 = 3G/HD-SDI
4 = None

x3 = Input video format:
0 = No signal detected (only valid for detected input format query, such as **x1***\ or “ 1”)
1 = RGB 5 = Composite video
2 = YUV Auto 6 = DVI/HDMI (only available for inputs 3, 4, and 5)
3 = RGBcvS 7 = Auto detect (default for inputs 1 and 2)
4 = S-video

x4 = Horizontal/vertical start — 0 to 255 (default midpoint = 128)

x5 = Pixel phase — 0 to 63 (default = 31)

x6 = Total pixels — (±512 of the default value)

x7 = Active pixels — (±512 of the default value)

x8 = Active lines — (±512 of the default value)

x9 = Enable/disable; 0 = Off/disable, 1 = On/enable

x10 = Input standard:
0 = No signal detected 3 = NTSC 4.43
1 = NTSC 3.85 4 = SECAM
2 = PAL
- = N/A (occurs when input is an active RBG, YUV auto [but not NTSC/PAL], or HDMI signal)

x11 = Internal temperature (in degrees Celsius)

x12 = Unit name is a text string of up to 24 characters drawn from the alphabet (A-Z), digits (0-9), and the minus sign/hyphen (-). The first character must be an alpha character. The last character must not be a minus. No blank or space characters are permitted, and no distinction is made between upper- and lowercase.

x13 = Horizontal and vertical frequencies (format is three-digit with single decimal and leading zeros for example, 075.3)

x14 = Text label/preset name: up to 16 characters

NOTE: User and input presets saved without a name are saved with the default names “User Preset xx” (for example User preset 12) or Input preset xxx (for example input preset 122).

x15 = Picture adjustment — 0 to 127 (default 64)

x16 = Horizontal and vertical position, ±11000, with leading “+” or “-”, for example “- 02040”

x17 = Horizontal and vertical size, 0 to 11000

x18 = Image /window number: 1 = main window, 2 = PIP window

x19 = Scaler resolution/EDID emulation:

0 = Automatic: match current output resolution (default for EDID emulation) LCD reads Match Output

1 = Output #1 (analog VGA connector — available for Save and Export EDID commands only)

2 = Output #2 (HDMI connector — available for Save and Export EDID commands only)

3 = Custom EDID/output rate #1

6 = Custom EDID/output rate #4

4 = Custom EDID/output rate #2

7 = Custom EDID/output rate #5

5 = Custom EDID/output rate #3

SIS variables for EDID resolution/refresh rate combination (where x19 = 10 through 92)									
Resolution	23.98 Hz	24 Hz	25 Hz	29.97 Hz	30 Hz	50 Hz	59.94 Hz	60 Hz	75 Hz
640x480						10		11	12
800x600						13		14	15
852x480						16		17	18
1024x768						19		20	21
1024x852						22		23	24
1024x1024						25		26	27
1280x768						28		29	30
1280x800						31		32	33
1280x1024						34		35	36
1360x765						37		38	39
1360x768						40		41	42
1365x768						43		44	45
1366x768						46		47	48
1365x1024						49		50	51
1440x900						52		53	54
1400x1050						55		56	
1600x900						57		58	
1680x1050						59		60	
1600x1200						61		62	
1920x1200						63		64	
480p							65	66	
576p						67			
720p			68	69	70	71	72	73*	
1080i						74	75	76	
1080p	77	78	79	80	81	82	83	84	
2048x1080 2k	85	86	87	88	89	90	91	92	

* Default output resolution

Figure 29. SIS Command EDID Table

x20 = Test patterns:

0 = Off (default)

1 = Crop

2 = Alternating pixels

3 = Alternating lines

4 = Crosshatch

5 = 4x4 crosshatch

6 = Color bars

7 = Grayscale

8 = Ramp

9 = White field

10 = 1.33 aspect ratio

11 = 1.78 aspect ratio

12 = 1.85 aspect ratio

13 = 2.35 aspect ratio

14 = Blue mode

- x21** = Analog output polarity:
 - 0 = H-/V- (default)
 - 1 = H-/V+
 - 2 = H+/V-
 - 3 = H+/V+

- x22** = Analog output sync format:
 - 0 = RGBHV (default)
 - 1 = RGBS
 - 2 = RGsB
 - 3 = Y, R-Y, B-Y bi-level
 - 4 = Y, R-Y, B-Y tri-level

- x23** = User presets or PIP presets — 1 to 16

- x24** = Input presets — 1 to 128

- x25** = On-screen menu time-out or screen saver sync timeout, (default = 3 seconds)/ output sync time-out (default = 501 - never)
 - 0 = OSD never displayed/output sync is instantly disabled with no active input,
 - 1 to 500, in 1 second increments,
 - 501 = OSD never times out, output sync is never disabled

- x26** = Executive mode status:
 - 0 = Off/disable, (default)
 - 1 = Exec Mode 1 — Complete front panel lockout
 - 2 = Exec Mode 2 — Partial front panel lockout (only input selection, Auto-Image, and PIP/Swap are still available)

- x27** = PIP window input selection: 0 to 4 (0 = Off). (Input 5 not available for PIP mode)

- x28** = Overscan (applied to SMPTE [NTSC, PAL, 480p, 576p, 720p, 1080i, 1080p] input rates):
 - 0 = 0.0% (default for RGB) — a “true” Auto-Image will be executed on SMPTE inputs.
 - 1 = 2.5% (default for YUV Auto, RGBcvS) — an Auto-Image command snaps to a 2.5% table; no true Auto-Image.
 - 2 = 5.0% (default for composite video and S-video) — an Auto-Image command snaps to a 5.0% table; no true Auto-Image.

- x29** = Aspect ratio:
 - 1 = Fill: each input rate will automatically fill the entire output raster (default)
 - 2 = Follow: each input rate will be displayed with its native aspect ratio

- x30** = Screen saver mode:
 - 1 = Black screen (default)
 - 2 = Blue screen with OSD text

- x31** = Video mute;
 - 0 = Off/disable
 - 1 = On/enable (mute to black)
 - 2 = mute output sync and video

- x32** = Auto-Image threshold value, 0 (black) though 100 (white), default = 25

- x33** = HDCP status (valid only on HDMI/DVI outputs):
 - 0 = No sink or source detected
 - 1 = Sink or source detected with HDCP
 - 2 = Sink or source detected but no HDCP is present

- x34** = Video switching effect:
 - 0 = Cut
 - 1 = Dissolve (default)

- x36** = HDMI output format:
 0 = Auto (based on sink EDID), default
 1 = DVI
 2 = HDMI 444 RGB (0-255, audio, InfoFrames)
 3 = HDMI 444 YUV "FULL" (0-255, audio, InfoFrames)
 4 = HDMI 444 YUV "LIMITED" (16-235, audio, InfoFrames)
 5 = HDMI 422 YUV "FULL" (0-255, audio, InfoFrames)
 6 = HDMI 422 YUV "LIMITED" (16-235, audio, InfoFrames)
- x37** = Auto wwitch mode:
 0 = Disable (default)
 1 = Gives priority to the highest input
 2 = Gives priority to the lowest input
- x38** = Audio Volume range: -100 dB to 0 dB, in 1.0 dB steps, default = -30 dB (with leading "-"); where 0 = 0 dB (max volume output)
- x39** = Audio output format:
 1 = Dual mono
 2 = Stereo (default)
- x40** = Audio gain/Attenuation: -53 through +09dB, (with leading "+" or "-")
- x41** = Audio source:
 0 = Follow Main window
 1 = Follow PIP window
 2 = Toggle source
- x42** = Audio Input type:
 0 = None, input is muted (EDID has no CEA extension)
 1 = Analog, 5-pole captive screw (EDID has no CEA extension)
 2 = 2CH digital, embedded in HDMI input, (2CH PCM audio requested from source via EDID)
 3 = Full digital, (via EDID to allow any digital audio format from source)
 4 = 2CH digital, Auto (2CH PCM audio requested from source via EDID), Scaler uses embedded digital audio when present, or defaults to the input's analog 5-pole captive screw
 5 = FULL Digital Auto (FULL audio is requested from source via EDID). Scaler uses embedded digital audio when present, or defaults to input's analog 5-pole captive screw.

NOTES: • Inputs 1 and 2 can only be set to **x42** = 0 (all models) or 1 (audio model only). Attempting to set these inputs to any other format gives an "E14" error message.

- Non-audio models of the DVS 605 will allow **x42** = 0 on inputs 1 and 2, and **x42** = 0, 2, or 3 on inputs 3, 4, and 5.

- x43** = Static Audio Delay, 0 through 255 milliseconds (default is 0)

NOTE: The static audio is in addition to the automatic audio delay that is applied by the DVS 605 to compensate for internal video processing.

- x44** = Video Signal Status
 0 = Video / TMDS signal not detected
 1 = Video / TMDS signal detected
- x45** = Power Save modes
 0 = Full power mode (Default)
 1 = Low power state
- x46** = Screen Saver Status
 0 = Active input detected; timer not running
 1 = No active input; timer is running; output sync still active
 2 = No active input; timer has expired; output sync disabled

X115 = Parity: **O**dd, **E**ven, **N**one, **M**ark, **S**pace [only use the first letter] (default is **N** = **N**one)

X116 = Data bits: 7, 8 (default = 8)

X117 = Stop bits: 1, 2 (default = 1)

X119 = Flow Control: **H**ardware, **S**oftware, **N**one [only use the first letter] (default is **N** = **N**one)

X120 = Data Pacing [specified in milliseconds between bytes]: 0000 – 1000 (default=0ms).
For host port(s), this value is ignored – always returns 0.

X121 = Password (12 characters = maximum length; no special characters are allowed.)

NOTE: A user password cannot be assigned if no administrator password exists; the E14 error code is returned. If the administrator password is cleared, the user password is also removed.

X123 = Reading password: All connections respond with 4 asterisk (****) if password exists or empty if not, instead of the actual password.

X125 = Connection's security level:
0 = anonymous, 11 = User,
1 – 10 = extended security levels 1 thru 10 12 = Administrator

X126 = Broadcast repetition rate in seconds, (0 – 255 max; default = 0 = clear)
The response is 2-digits returned with leading zeros. 1 – 11 = entry without password goes to the level specified (if an admin password exists).

X127 = The number of seconds before timeout on the IP connection: min. = 1; max. = 65000; (default = 30 = 300 seconds). If no data is received during the timeout period, the Ethernet connection is closed. Each step = 10 seconds. Applicable only when connected via Ethernet. When connected via RS-232 only the global timeout commands apply (current returns E13). Response is returned with leading zeros.

X128 = Hardware (MAC) address: 4 most-significant hex nibbles converted to 16-bit decimal number.

X129 = Hardware (MAC) address: 8 least significant hex nibbles converted into single 32-bit decimal number. (Note: this could be as large as 10 digits!)

X130 = General Information Query ('I' commands)
1 = Model name [e.g. <DVS 605>]
2 = Model description [e.g. <Digital Video Scaler>]
3 = System memory Usage [<# Bytes Used out of # Kbytes>]
4 = User memory Usage [<# Bytes Used out of # Kbytes>]

X131 = Firmware Query ('Q' commands)
*Q = Firmware and build number [<X.YY.ZZZZ>]
0Q = Verbose version information [<2Q> - <3Q> - <4Q>] sum of responses from 2Q-3Q-4Q
1Q = Firmware version [<currently running code (X.YY)>]
2Q = Final stage bootloader (Uboot) version [<X.YY>]
3Q = Factory base code version [<factory base code (X.YY)>*<kernel version (X.YY) – description – date loaded >]
4Q = Updated firmware version [<updated code version (X.YY)>*<kernel version (X.YY) – description – date loaded >]

NOTE: For 3Q and 4Q, an asterisk '*' after version number indicates which version is currently running. A question mark (?.?) indicates that only the factory firmware version is loaded. A caret (^) indicates the firmware version that should be running, but a Mode 1 reset was executed and the default factory firmware version is loaded. An exclamation point (!) indicates corrupted firmware. [Example: 1.03*(1.42-DVS 605 -Thu, 21 Apr 2012 22:30:57 GMT).]

SIS Command and Response Table

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Input selection			
Video and audio	[X1]!	In [X1]•All←	Select video and audio from input [X1].
Video	[X1]&	In [X1]•RGB←	Select video from input source [X1].
Audio	[X1]\$	In [X1]•Aud←	Select audio from input source [X1].
View video input	&	[X1]←	View current video input [X1].
View audio input	\$	[X1]←	View current audio input [X1].
View current input	!	[X1]←	View current selected input [X1] (video only).
<p>NOTE: Audio breakaway (\$) is not allowed TO an input configured for any digital audio format. Video breakaway (&) is not allowed FROM an input configured for any digital audio format. Attempting either of these invalid modes gives an E17 error. Audio breakaway is always allowed back TO the current video input. When in PIP mode, audio breakaway is not supported. Audio follows either the main window or the PIP window, and is selectable via SIS command.</p>			
Input video format			
Set video format	[X1]*[X3]\	Typ[X1]*[X3]←	Set input [X1] to format [X3].
View set format	[X1]\	[X3]←	View set video format of input [X1].
View detected format	[X1]* \	[X3]←	View actual video format auto detected on input [X1].
		VTyp[X1]*[X3]←	(Verbose mode response)
Input EDID (VGA and HDMI)			
Assign EDID to input	[Esc]A[X1]*[X19]EDID←	EdidA[X1]*[X19]←	Assign EDID resolution and refresh rate [X19] for input [X1].
View assigned EDID data	[Esc]A[X1]EDID←	[X19]←	View assigned EDID resolution and refresh rate [X19] for input [X1].
		EdidA[X1]*[X19]←	(Verbose mode response)
Capture an output EDID to custom slot	[Esc]S[X2]*[X19]EDID←	EdidS[X2]*[X19]←	Capture output [X2] EDID to [X19] (Valid for [X19] = 3, 4, 5, 6, 7 only and [X2] = 1 or 2 only.)
Export EDID file	[Esc]E*[X19],<filename> EDID←	EdidE[X19]←	Exports EDID table [X19] to <filename>.
Import EDID file	[Esc]I*[X19],<filename> EDID←	EdidI[X19]←	Imports EDID table [X19] from <filename>. (Import valid for [X19] = 3, 4, 5, 6, and 7.)
<p>NOTE: <filename> can optionally carry a full path name: EDID file format is "bin" carrying 128 or 256 bytes of binary data. Exporting a default EDID table (for an [X19] value of 10 or greater) results in the "digital" "2CH Digital" table being exported.</p>			

NOTE: [X1] = Input number: 1 through 5
 [X3] = Input video format: 0 = No signal detected, 1 = RGB, 2 = YUV Auto, 3 = RGBcvS, 4 = S-video, 5 = Composite, 6 = DVI/HDMI (only available for inputs 3, 4, and 5), 7 = Auto detect (default for inputs 1 and 2)
 [X19] = Scaler resolution/EDID emulation, 0 = Automatic: match current output resolution (default), 1 = Output #1 Analog VGA connector, 2 = Output #2 HDMI connector, 3 = Custom EDID/output rate #1, 4 = Custom EDID/output rate #2, 5 = Custom EDID/output rate #3, 6 = Custom EDID/output rate #4, 7 = Custom EDID/output rate #5.
 For variables 10-78, see the [SIS EDID table](#).

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Input name			
Write input name	<code>[Esc] [X1], [X14]NI ←</code>	<code>Nm1[X1], [X14]↵</code>	Set the name <code>[X14]</code> for input <code>[X1]</code> .
Read input name	<code>[Esc][X1]NI ←</code>	<code>[X14]↵</code>	View input <code>[X1]</code> name <code>[X14]</code> .
<div style="border: 1px solid black; padding: 5px;"> <p>NOTE: To clear an input name, a single space character should be entered for <code>[X14]</code>. This resets the input name to the default value.</p> </div>			
Auto-Image			
Enable	<code>[X1]*1A</code>	<code>Img[X1]*1↵</code>	Activate Auto-Image for input <code>[X1]</code> .
Disable	<code>[X1]*ØA</code>	<code>Img[X1]*Ø↵</code>	Turn Auto-Image off for input <code>[X1]</code> .
View	<code>[X1]A</code>	<code>[X9]↵</code>	View Auto-Image setting: (0 = On, 1 = Off).
Execute	<code>Ø*A</code>	<code>ImgØ↵</code>	Execute an Auto-Image to the selected input (follows current aspect setting).
Execute and Fill	<code>1*A</code>	<code>Img1↵</code>	Execute an Auto-Image and fill entire output.
Execute and Follow	<code>2*A</code>	<code>Img2↵</code>	Execute an Auto-Image and follow the aspect ratio of the input.
Auto-Image threshold value (luminosity value which the scaler defines as active video for Auto-Image)			
Set value	<code>[Esc][X32]ALVL ←</code>	<code>Alv1[X32]↵</code>	Set global auto image luminosity value <code>[X32]</code> .
View	<code>[Esc]ALVL ←</code>	<code>[X32]↵</code>	View global auto image luminosity value <code>[X32]</code> .
Horizontal start			
Specify a value	<code>[Esc][X1]*[X4]HSRT ←</code>	<code>Hsrt[X1]*[X4]↵</code>	Set horizontal location of first active pixel for input <code>[X1]</code> .
Increment value	<code>[Esc][X1]+HSRT ←</code>	<code>Hsrt[X1]*[X4]↵</code>	Increment horizontal start position.
Decrement value	<code>[Esc][X1]-HSRT ←</code>	<code>Hsrt[X1]*[X4]↵</code>	Decrement horizontal start position.
View	<code>[Esc][X1]HSRT ←</code>	<code>[X4]↵</code>	Show horizontal location of first active pixel for input <code>[X1]</code> .
Vertical start			
Specify a value	<code>[Esc][X1]*[X4]VSRT ←</code>	<code>Vsrt[X1]*[X4]↵</code>	Set vertical location of first active pixel for input <code>[X1]</code> .
Increment value	<code>[Esc][X1]+VSRT ←</code>	<code>Vsrt[X1]*[X4]↵</code>	Increase vertical start.
Decrement value	<code>[Esc][X1]-VSRT ←</code>	<code>Vsrt[X1]*[X4]↵</code>	Decrease vertical start.
View	<code>[Esc][X1]VSRT ←</code>	<code>[X4]↵</code>	Show vertical location of first active pixel for input <code>[X1]</code> .

NOTE: `[X1]` = Input selection: 1 to 5
`[X4]` = Horizontal/vertical start: 0 to 255 (default midpoint = 128)
`[X9]` = Enable/Disable: 0 = Off/disable, 1 = On/enable
`[X14]` = Text label/preset name, up to 16 characters
`[X32]` = Auto-Image threshold value: 0 (black) though 100 (white), default = 25

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Pixel phase (available only for RGB and YUV Auto input signals)			
Specify a value	<code>[Esc][X1]*[X5]PHAS←</code>	<code>Phas[X1]*[X5]←</code>	Adjust the pixel phase to specified value <code>[X5]</code> for input <code>[X1]</code> .
Increment value	<code>[Esc][X1]+PHAS←</code>	<code>Phas[X1]*[X5]←</code>	Increase the pixel phase.
Decrement value	<code>[Esc][X1]-PHAS←</code>	<code>Phas[X1]*[X5]←</code>	Decrease the pixel phase.
View	<code>[Esc][X1]PHAS←</code>	<code>[X5]←</code>	Show the pixel phase for input <code>[X1]</code> .
Total pixels (available only for RGB and YUV Auto input signals)			
Specify a value	<code>[Esc][X1]*[X6]TPIX←</code>	<code>Tpix[X1]*[X6]←</code>	Adjust the total pixels to specified value <code>[X6]</code> for input <code>[X1]</code> .
Increment value	<code>[Esc][X1]+TPIX←</code>	<code>Tpix[X1]*[X6]←</code>	Increase the total pixels.
Decrement value	<code>[Esc][X1]-TPIX←</code>	<code>Tpix[X1]*[X6]←</code>	Decrease the total pixels.
View	<code>[Esc][X1]TPIX←</code>	<code>[X6]←</code>	Show the total pixels for input <code>[X1]</code> .
Active pixels			
Specify a value	<code>[Esc][X1]*[X7]APIX←</code>	<code>Apix[X1]*[X7]←</code>	Adjust the active pixels to a specified value <code>[X7]</code> for input <code>[X1]</code> .
Increment value	<code>[Esc][X1]+APIX←</code>	<code>Apix[X1]*[X7]←</code>	Increase the active pixels.
Decrement value	<code>[Esc][X1]-APIX←</code>	<code>Apix[X1]*[X7]←</code>	Decrease the active pixels.
View	<code>[Esc][X1]APIX←</code>	<code>[X7]←</code>	Show the active pixels for input <code>[X1]</code> .
Active lines			
Specify a value	<code>[Esc][X1]*[X8]ALIN←</code>	<code>Alin[X1]*[X8]←</code>	Adjust the active lines to a specified value <code>[X8]</code> for input <code>[X1]</code> .
Increment value	<code>[Esc][X1]+ALIN←</code>	<code>Alin[X1]*[X8]←</code>	Increase the active lines.
Decrement value	<code>[Esc][X1]-ALIN←</code>	<code>Alin[X1]*[X8]←</code>	Decrease the active lines.
View	<code>[Esc][X1]ALIN←</code>	<code>[X8]←</code>	Show the active lines for input <code>[X1]</code> .
3:2, 2:2, and 24:1 Film mode detect			
Enable	<code>[Esc][X1]*1FILM←</code>	<code>Film[X1]*1←</code>	Enable Film mode detection.
Disable	<code>[Esc][X1]*ØFILM←</code>	<code>Film[X1]*Ø←</code>	Disable Film mode detection.
View	<code>[Esc][X1]FILM←</code>	<code>[X9]←</code>	View the currently applied film mode setting.

NOTE: `[X1]` = Input selection: 1 to 5
`[X5]` = Pixel phase: 0 to 63 (default = 31)
`[X6]` = Total pixels: ±512 of the default value
`[X7]` = Active pixels: ±512 of the default value
`[X8]` = Active lines: ±512 of the default value
`[X9]` = Enable/disable: 0 = Off/disable, 1 = On/enable

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Picture Adjustments			
Video mute			
Mute all outputs to black	1B	Vmt1←	Mutes video and displays black video on all outputs.
Mute all sync and video	2B	Vmt2←	Mutes sync and video on all outputs.
Unmute all outputs	ØB	VmtØ←	Unmutes all outputs.
View	B	X31←	View the mute status (0 = disabled, 1 = enabled - mute to black, 2 = mute output sync and video).
Color			
Set a specific value	EscX1*X15COLR←	ColrX1*X15←	Set color level to X15 for input X1.
Increment up	EscX1+COLR←	ColrX1*X15←	Increment color level.
Increment down	EscX1-COLR←	ColrX1*X15←	Decrement color level.
View	EscX1COLR←	X15←	View current setting for input X1.
Tint			
Set a specific value	EscX1*X15TINT←	TintX1*X15←	Set tint level to X15 for input X1.
Increment up	EscX1+TINT←	TintX1*X15←	Increment tint level.
Increment down	EscX1-TINT←	TintX1*X15←	Decrement tint level.
View	EscX1TINT←	X15←	View current setting for input X1.
Contrast			
Set a specific value	EscX1*X15CONT←	ContX1*X15←	Set contrast level to X15 for input X1.
Increment up	EscX1+CONT←	ContX1*X15←	Increment contrast level.
Increment down	EscX1-CONT←	ContX1*X15←	Decrement contrast level.
View	EscX1CONT←	X15←	View current setting for input X1.
Brightness			
Set a specific value	EscX1*X15BRIT←	BritX1*X15←	Set brightness level to X15 for input X1.
Increment up	EscX1+BRIT←	BritX1*X15←	Increment brightness level.
Increment down	EscX1-BRIT←	BritX1*X15←	Decrement brightness level.
View	EscX1BRIT←	X15←	View current setting for input X1.
Detail filter			
Set detail level	EscX1*X15HDET←	HdetX1*X15←	Specify the detail level to X15 for input X1.
Increment up	EscX1+HDET←	HdetX1*X15←	Increase the detail level.
Increment down	EscX1-HDET←	HdetX1*X15←	Decrease the detail level.
View detail value	EscX1HDET←	X15←	Show the detail setting for input X1.

NOTE: X1 = Input selection: 1 to 5
X15 = Picture adjustment: 0 to 127 (default 64)
X31 = Video mute: 0 = Off/disable, 1 = On/enable (mute to black), 2 = mute output sync and video

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Horizontal position (window)			
Specific value	$\text{Esc}1 * \text{X18} * \text{X16} \text{HCTR} \leftarrow$	$\text{Hctr}1 * \text{X18} * \text{X16} \leftarrow$	Set horizontal position to X16 for window X18 .
Increment up	$\text{Esc}1 * \text{X18} + \text{HCTR} \leftarrow$	$\text{Hctr}1 * \text{X18} * \text{X16} \leftarrow$	Shift window right.
Increment down	$\text{Esc}1 * \text{X18} - \text{HCTR} \leftarrow$	$\text{Hctr}1 * \text{X18} * \text{X16} \leftarrow$	Shift window left.
View	$\text{Esc}1 * \text{X18} \text{HCTR} \leftarrow$	$\text{X16} \leftarrow$	View the horizontal position value X16 for window X18 .
Vertical position (window)			
Specific value	$\text{Esc}1 * \text{X18} * \text{X16} \text{VCTR} \leftarrow$	$\text{Vctr}1 * \text{X18} * \text{X16} \leftarrow$	Set vertical position to X16 for window X18 .
Increment up	$\text{Esc}1 * \text{X18} + \text{VCTR} \leftarrow$	$\text{Vctr}1 * \text{X18} * \text{X16} \leftarrow$	Shift window down.
Increment down	$\text{Esc}1 * \text{X18} - \text{VCTR} \leftarrow$	$\text{Vctr}1 * \text{X18} * \text{X16} \leftarrow$	Shift window up.
View	$\text{Esc}1 * \text{X18} \text{VCTR} \leftarrow$	$\text{X16} \leftarrow$	View the vertical position value X16 for window X18 .
Horizontal size (window)			
Specific value	$\text{Esc}1 * \text{X18} * \text{X17} \text{HSIZ} \leftarrow$	$\text{Hsiz}1 * \text{X18} * \text{X17} \leftarrow$	Set horizontal sizing to X17 for window X18 .
Increase size	$\text{Esc}1 * \text{X18} + \text{HSIZ} \leftarrow$	$\text{Hsiz}1 * \text{X18} * \text{X17} \leftarrow$	Widen the window.
Decrease size	$\text{Esc}1 * \text{X18} - \text{HSIZ} \leftarrow$	$\text{Hsiz}1 * \text{X18} * \text{X17} \leftarrow$	Make the window narrower.
View	$\text{Esc}1 * \text{X18} \text{HSIZ} \leftarrow$	$\text{X17} \leftarrow$	View horizontal sizing value X17 for window X18 .
Vertical size (window)			
Specific value	$\text{Esc}1 * \text{X18} * \text{X17} \text{VSIZ} \leftarrow$	$\text{Vsiz}1 * \text{X18} * \text{X17} \leftarrow$	Set vertical sizing to X17 for window X18 .
Increase size	$\text{Esc}1 * \text{X18} + \text{VSIZ} \leftarrow$	$\text{Vsiz}1 * \text{X18} * \text{X17} \leftarrow$	Make the window taller.
Decrease size	$\text{Esc}1 * \text{X18} - \text{VSIZ} \leftarrow$	$\text{Vsiz}1 * \text{X18} * \text{X17} \leftarrow$	Make the window shorter.
View	$\text{Esc}1 * \text{X18} \text{VSIZ} \leftarrow$	$\text{X17} \leftarrow$	View vertical sizing value X17 for window X18 .
Horizontal position (image)			
Specific value	$\text{Esc}2 * \text{X18} * \text{X16} \text{HCTR} \leftarrow$	$\text{Hctr}2 * \text{X18} * \text{X16} \leftarrow$	Set horizontal position to X16 for image X18 .
Increment up	$\text{Esc}2 * \text{X18} + \text{HCTR} \leftarrow$	$\text{Hctr}2 * \text{X18} * \text{X16} \leftarrow$	Shift image right.
Increment down	$\text{Esc}2 * \text{X18} - \text{HCTR} \leftarrow$	$\text{Hctr}2 * \text{X18} * \text{X16} \leftarrow$	Shift image left.
View	$\text{Esc}2 * \text{X18} \text{HCTR} \leftarrow$	$\text{X16} \leftarrow$	View the horizontal position value X16 for image X18 .
Vertical position (image)			
Specific value	$\text{Esc}2 * \text{X18} * \text{X16} \text{VCTR} \leftarrow$	$\text{Vctr}2 * \text{X18} * \text{X16} \leftarrow$	Set vertical position to X16 for image X18 .
Increment up	$\text{Esc}2 * \text{X18} + \text{VCTR} \leftarrow$	$\text{Vctr}2 * \text{X18} * \text{X16} \leftarrow$	Shift image down.
Increment down	$\text{Esc}2 * \text{X18} - \text{VCTR} \leftarrow$	$\text{Vctr}2 * \text{X18} * \text{X16} \leftarrow$	Shift image up.
View	$\text{Esc}2 * \text{X18} \text{VCTR} \leftarrow$	$\text{X16} \leftarrow$	View the vertical position value X16 for image X18 .

NOTE: X16 = Horizontal and vertical position: ± 11000 , with leading "+" or "-", for example "- 02040"
 X17 = Horizontal and vertical size: 0 to 11000
 X18 = Image /window number: 1 = Main window, 2 = PIP window

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Horizontal size (image)			
Specific value	<code>[Esc]2*[X18]*[X17]HSIZ←</code>	<code>Hsiz2*[X18]*[X17]←</code>	Set horizontal sizing to <code>[X17]</code> for image <code>[X18]</code> .
Increase size	<code>[Esc]2*[X18]+HSIZ←</code>	<code>Hsiz2*[X18]*[X17]←</code>	Widen the image.
Decrease size	<code>[Esc]2*[X18]-HSIZ←</code>	<code>Hsiz2*[X18]*[X17]←</code>	Make the image narrower.
View	<code>[Esc]2*[X18]HSIZ←</code>	<code>[X17]←</code>	View horizontal sizing value <code>[X17]</code> for image.
Vertical size (image)			
Specific value	<code>[Esc]2*[X18]*[X17]VSIZ←</code>	<code>Vsiz2*[X18]*[X17]←</code>	Set vertical sizing to <code>[X17]</code> for image <code>[X18]</code> .
Increase size	<code>[Esc]2*[X18]+VSIZ←</code>	<code>Vsiz2*[X18]*[X17]←</code>	Make the image taller.
Decrease size	<code>[Esc]2*[X18]-VSIZ←</code>	<code>Vsiz2*[X18]*[X17]←</code>	Make the image shorter.
View	<code>[Esc]2*[X18]VSIZ←</code>	<code>[X17]←</code>	View vertical sizing value <code>[X17]</code> for image.
Output Configuration			
Output scaler rate			
Set output rate	<code>[Esc][X19]RATE←</code>	<code>Rate[X19]←</code>	Select output resolution and refresh rate.
View output rate	<code>[Esc]RATE←</code>	<code>[X19]←</code>	Show selected output rate.
Output polarity (valid when VGA format is set to RGBHV)			
Set polarity	<code>[Esc][X21]OPOL←</code>	<code>Opol[X21]←</code>	Set polarity for VGA RGBHV output.
View polarity setting	<code>[Esc]OPOL←</code>	<code>[X21]←</code>	Show current output polarity.
VGA output sync format			
Set format	<code>[Esc][X22]OSYN←</code>	<code>Osyn[X22]←</code>	Set output sync format of the VGA output.
View sync setting	<code>[Esc]OSYN←</code>	<code>[X22]←</code>	Show current output sync format.
HDMI output format			
Set format	<code>[Esc][X36]VTPO←</code>	<code>Vtpo[X36]←</code>	Set output color space/format for the HDMI output <code>[X36]</code> .
View setting	<code>[Esc]VTPO←</code>	<code>[X36]←</code>	Show current HDMI format.
Power save mode			
Power save off	<code>[Esc]0PSAV←</code>	<code>Psav0←</code>	DVS runs in full power mode (default).
Power save on	<code>[Esc]1PSAV←</code>	<code>Psav1←</code>	DVS enters low power mode. Can only be exited using <code>[Esc]0PSAV←</code> command.
View setting	<code>[Esc]PSAV←</code>	<code>[X45]←</code>	View power save status.

NOTE: `[X17]` = Horizontal and vertical size: 0 to 11000
`[X18]` = Image /window number: 1 = Main window, 2 = PIP window
`[X19]` = Scaler resolution/EDID emulation:
Examples: 1024x768/60, 720p/60, 1080p/60, 1920x1200/60. See [EDID table](#) for full details.
`[X21]` = Output polarity: 0 = H-/V- (default), 1 = H-/V+, 2 = H+/V-, 3 = H+/V+
`[X22]` = Output sync format: 0 = RGBHV (default), 1 = RGBS, 2 = RGSB, 3 = Y, R-Y, B-Y bi-level, 4 = Y, R-Y, B-Y tri-level
`[X36]` = HDMI output format:
0 = Auto (based on sink EDID), default
1 = DVI
2 = HDMI 444 RGB (0-255, audio, InfoFrames)
3 = HDMI 444 YUV "FULL" (0-255, audio, InfoFrames)
4 = HDMI 444 YUV "LIMITED" (16-235, audio, InfoFrames)
5 = HDMI 422 YUV "FULL" (0-255, audio, InfoFrames)
6 = HDMI 422 YUV "LIMITED" (16-235, audio, InfoFrames). See [command description for details](#).
`[X45]` = Power save mode: 0 = Full power mode (default), 1 = Low power state

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Screen saver mode (action that takes place when no signal is detected on the selected input)			
Set mode	Esc M <code>[X30]</code> SSAV←	SsavM <code>[X30]</code> ←	Sets the screen saver mode to <code>[X30]</code> (default: 1 = black)
View mode	Esc MSSAV←	<code>[X30]</code> ←	View the current screen saver mode.
Set sync time out duration	Esc T <code>[X25]</code> SSAV←	SsavT <code>[X25]</code> ←	Sets sync time out duration to <code>[X25]</code> seconds (default: 501 = never).
View sync time out duration	Esc TSSAV←	<code>[X25]</code> ←	View sync time out duration <code>[X25]</code> .
View screen saver status	Esc SSSAV←	<code>[X46]</code> ←	View the screen saver status <code>[X46]</code> .
Audio Configuration			
Audio mute (global settings)			
Mute on	1Z	Amt1←	Mute selected input.
Mute off	ØZ	AmtØ←	Un-mute selected input.
View status	Z	<code>[X9]</code> ←	View mute status, (0 = mute off, 1 = mute on).
Audio gain and attenuation (audio models only: per analog input)			
Set gain/attenuation	<code>[X40]</code> G	Aud <code>[X40]</code> ←	Set gain/attenuation on current input to <code>[X40]</code> dB.
Increment	+G	Aud <code>[X40]</code> ←	Increment audio level (up).
Decrement	-G	Aud <code>[X40]</code> ←	Decrement audio level (down).
View	G	<code>[X40]</code> ←	View current audio level.
Volume control (audio models only)			
Set specific volume	<code>[X38]</code> V	Vol <code>[X38]</code> ←	Set volume to <code>[X38]</code> .
Increment	+V	Vol <code>[X38]</code> ←	Increase volume.
Decrement	-V	Vol <code>[X38]</code> ←	Decrease volume.
View	V	<code>[X38]</code> ←	View current volume setting.
Audio delay (available on all models)			
Set static delay	Esc S <code>[X43]</code> ADLY←	AdlyS <code>[X43]</code> ←	Set static audio delay to <code>[X43]</code> ms (range 0-255 ms).
View setting	Esc SADLY←	<code>[X43]</code> ←	View audio delay (<code>[X43]</code>) in milliseconds.

NOTE: `[X9]` = Enable/disable; 0 = Off/disable, 1 = On/enable
`[X25]` = On-screen menu time-out: (default = 3 seconds), output sync time-out (default = 501 - never)
0 = OSD never displayed/output sync is instantly disabled with no active input,
1 to 500, in 1 second increments, 501 = OSD never times out/output sync never times out
`[X30]` = Screen saver mode: 1 = Black screen (default), 2 = Blue screen with OSD text
`[X38]` = Audio volume range: 000 to -100 dB (default = -30 dB), in 1.0 dB step, with max = 0 dB and min = -100 dB.
attenuation, plus hardware mute
`[X40]` = -53 through +09 dB, (with leading "+" or "-")
`[X43]` = Static audio delay: 0 through 255 milliseconds
`[X46]` = Screen saver status: 0 = Active input detected; timer not running, 1 = No active input; timer is running;
output sync still active, 2 = No active input; timer has expired; output sync disabled

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Audio input format			
NOTES: <ul style="list-style-type: none"> • Selects between analog (5-pole captive screw) or digital (embedded in HDMI input) audio sources. • Inputs 1 and 2 X42 can only be set to 0 or 1; attempting to set these inputs to a digital format yields an E14 response. • Digital auto modes (4 or 5) detect and use embedded audio when present, or analog audio if digital audio is not detected 			
Set None	Esc I X1 * 0 AFMT ←	AfmtI X1 * 0 ←	Mutes all audio for input X1 .
Set Analog	Esc I X1 * 1 AFMT ←	AfmtI X1 * 1 ←	Select analog audio for input X1 (default for inputs 1 and 2).
Set 2CH digital	Esc I X1 * 2 AFMT ←	AfmtI X1 * 2 ←	Select 2CH digital audio for input X1 (default for inputs 3, 4, and 5).
Set Full digital	Esc I X1 * 3 AFMT ←	AfmtI X1 * 3 ←	Select Full digital audio for input X1 .
Set 2CH digital auto	Esc I X1 * 4 AFMT ←	AfmtI X1 * 4 ←	Select auto detect audio for input X1 (valid for inputs 3, 4, and 5 only — EDID set to 2CH).
Set FULL digital auto	Esc I X1 * 5 AFMT ←	AfmtI X1 * 5 ←	Select auto detect audio for input X1 (valid for inputs 3, 4, and 5 only — EDID set to FULL).
View audio type	Esc I X1 AFMT ←	X42 ←	View the audio input type X42 for input X1 .
Audio output format			
Set format	Esc O X39 AFMT ←	AfmtO X39 ←	Set the fixed and variable audio output format.
View format	Esc OAFMT ←	X39 ←	View audio output format.
Audio follow			
Set	Esc X41 AFLW ←	Aflw X41 ←	Select audio source (main versus PIP).
View	Esc AFLW ←	X39 ←	View audio source (main versus PIP).

NOTE: **X1** = Input selection: 1 to 5
X39 = Audio output format: 1 = Dual mono, 2 = Stereo (default)
X41 = Audio source: 0 = Follow Main window, 1 = Follow PIP window, 2 = Toggle source
X42 = Audio Input type: 0 = None, 1 = Analog, 2 = 2CH digital, 3 = Full digital, 4 = 2CH digital, 5 = FULL Digital Auto
See **X42** for full commands.

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Presets			
User presets			
Recall preset	1 * <u>X23</u> .	1Rpr <u>X23</u> ↵	Recall user preset <u>X23</u> for selected input.
Save preset	1 * <u>X23</u> ,	1Spr <u>X23</u> ↵	Save user preset <u>X23</u> for selected input.
Delete/clear preset	Esc|X1 * <u>X23</u> PRST↵	PrstX1 * <u>X23</u> ↵	Clears user preset <u>X23</u> , and sets user preset <u>X23</u> name to [unassigned].
User preset name			
Write name	Esc|1 * <u>X23</u> , <u>X14</u> PNAM↵	Pnam1 * <u>X23</u> , <u>X14</u> ↵	Set the user preset <u>X23</u> to <u>X14</u> .
Read name	Esc|1 * <u>X23</u> PNAM↵	<u>X14</u> ↵	Read the name for user preset <u>X23</u> .
<p>NOTE: To restore a default user preset name, enter a single space character for <u>X14</u>; unassigned presets = "[unassigned]". Valid only for previously saved presets.</p>			
Input presets			
Recall preset	2 * <u>X24</u> .	2Rpr <u>X24</u> ↵	Recall input preset <u>X24</u> for selected input.
Save preset	2 * <u>X24</u> ,	2Spr <u>X24</u> ↵	Save input preset <u>X23</u> for selected input.
Delete/clear preset	Esc|X2 * <u>X24</u> PRST↵	PrstX2 * <u>X23</u> ↵	Clears input preset <u>X23</u> , and sets input preset <u>X23</u> name to [unassigned].
Input preset name			
Write name	Esc|2 * <u>X24</u> , <u>X14</u> PNAM↵	Pnam2 * <u>X24</u> , <u>X14</u> ↵	Set the input preset <u>X24</u> to <u>X14</u> .
Read name	Esc|2 * <u>X24</u> PNAM↵	<u>X14</u> ↵	Read the name for input preset <u>X24</u> .
<p>NOTE: To restore a default input preset name, enter a single space character for <u>X14</u>; unassigned presets = "[unassigned]".</p>			
PIP presets			
Recall preset without input	3 * <u>X23</u> .	3Rpr <u>X23</u> ↵	Recall PIP preset <u>X23</u> without inputs.
Recall preset with input	4 * <u>X23</u> .	4Rpr <u>X23</u> ↵	Recall PIP preset <u>X23</u> with inputs.
Save preset	4 * <u>X23</u> ,	4Spr <u>X24</u> ↵	Save PIP layout and inputs to preset <u>X23</u> .
Delete/clear preset	Esc|X4 * <u>X23</u> PRST↵	PrstX4 * <u>X23</u> ↵	Resets the PIP preset <u>X23</u> , and PIP preset <u>X23</u> name back to default factory settings.
PIP preset name			
Write name	Esc|3 * <u>X23</u> , <u>X14</u> PNAM↵	Pnam3 * <u>X23</u> , <u>X14</u> ↵	Set the user preset <u>X23</u> to <u>X14</u> .
Read name	Esc|3 * <u>X23</u> PNAM↵	<u>X14</u> ↵	Read the name for user preset <u>X23</u> .
<p>NOTE: To restore a default PIP preset name, enter a single space character for <u>X14</u>; default = "PIP PRESET XX" where "XX" is the current preset number (for example 05).</p>			

NOTE: X14 = Text label/preset name: up to 16 characters X23 = User presets or PIP presets: 1 to 16 X24 = Input presets: 1 to 128

User Presets		Input Presets				PIP Presets	
Color	H/V Window Position	Input Type	Color	H Start	H/V Window Position	Main H/V Window Position	PIP H/V Window Position
Tint	H/V Window Size	Preset Name	Tint	V Start	H/V Window Size	Main H/V Window Size	PIP H/V Window Size
Contrast	H/V Image Position	Audio Gain/Attenuation	Contrast	H Active	H/V Image Position	Main H/V Image Position	PIP H/V Image Position
Brightness	H/V Image Size		Brightness	V Active	H/V Image Size	Main H/V Image Size	PIP H/V Image Size
Detail			Detail	Phase		Main Input #	
Preset Name			Film Mode	Total Pixels		PIP Input #	

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Advanced Configuration			
Test pattern			
Set test pattern	[Esc][X20]TEST ←	Test [X20] ←	Set the test pattern to [X20] .
View test pattern	[Esc]TEST ←	[X20] ←	View the current test pattern.
Freeze			
Enable	1F	Frz1 ←	Freeze selected input.
Disable	ØF	FrzØ ←	Unfreeze selected input.
View	F	[X9] ←	Show the freeze status (1 = on, 0 = off).
Auto memories (per input)			
Enable	[Esc][X1]*1AMEM ←	Amem [X1]*1 ←	Set auto memory on. Previous settings for incoming signal are auto recalled.
Disable	[Esc][X1]*ØAMEM ←	Amem [X1]*Ø ←	Set auto memory off. Manual recall of input presets needed to configure input.
View setting	[Esc][X1]AMEM ←	[X9] ←	View current auto memory for input [X1] .
Input aspect ratio (per input)			
Enable Fill mode	[Esc][X1]*1ASPR ←	Aspr [X1]*1 ←	Sets input [X1] to always fill the entire raster (default).
Enable Follow mode	[Esc][X1]*2ASPR ←	Aspr [X1]*2 ←	Sets input [X1] to preserve its native aspect.
View aspect setting	[Esc][X1]ASPR ←	[X29] ←	View aspect ratio setting for input [X1] .
Auto switch mode			
Disable	[Esc]ØAUSW ←	AuswØ ←	Manual switching only (default).
Priority to highest active	[Esc]1AUSW ←	Ausw1 ←	Gives priority to the highest numbered active input.
Priority to lowest active	[Esc]2AUSW ←	Ausw2 ←	Gives priority to the lowest numbered active input.
View setting	[Esc]AUSW ←	[X37] ←	View the current auto switch mode.
Video effect			
Cut	[Esc]ØSWEF ←	SwefØ ←	Sets the switch to cut.
Dissolve	[Esc]1SWEF ←	Swef1 ←	Sets the switch to dissolve.
View setting	[Esc]SWEF ←	Ø ← (or 1 ←)	View setting (0 = cut, 1 = dissolve).

NOTE: **[X1]** = Input selection: 1 to 5
[X9] = Enable/Disable: 0 = Off/disable, 1 = On/enable
[X20] = Test patterns:
0 = off (default) 4 = crosshatch 8 = ramp 12 = 1.85 aspect ratio
1 = crop 5 = 4x4 crosshatch 9 = white field 13 = 2.35 aspect ratio
2 = alternating pixels 6 = color bars 10 = 1.33 aspect ratio 14 = blue mode
3 = alternating lines 7 = grayscale 11 = 1.78 aspect ratio
[X29] = Aspect ratio:
1 = Fill; each input rate will automatically fill the entire output raster (default)
2 = Follow; each input rate will be displayed with its native aspect ratio
[X37] = Auto switch mode: 0 = Disable (default), 1 = Priority to highest numbered input, 2 = Priority to lowest numbered input

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Front panel security lockout (Executive Mode)			
Enable Executive mode 1	1X	Exe1←	Lock entire front panel.
Enable Executive mode 2	2X	Exe2←	Limited front panel adjustments (input selection, PIP/Swap, and Auto- Image) can be made.
Disable Executive mode	ØX	ExeØ←	Unlock front panel controls. All front panel adjustments can be made.
View Executive mode status	X	Ø← (or) 1← (or) 2←	View the current status: 0 = off [default]; 1 = on, complete; 2 = on, limited adjustments.
Overscan mode (applies only to SMPTE [NTSC, PAL, 480p, 576p, 720p, 1080i, 1080p] input rates)			
Set value	Esc[X3]*[X28]OSCN←	Oscn[X3]*[X28]←	Set input format [X3] to overscan mode [X28].
View status	Esc[X3]OSCN←	[X28]←	Show overscan mode status for input format [X3].
HDCP notification (green screen/message)			
Enable notification	Esc|N1HDCP←	HdcpN1←	Enable the HDCP notification.
Disable notification	Esc|NØHDCP←	HdcpNØ←	Disable the HDCP notification; instead mute output.
Query notification	Esc|NHDCP←	[X9]←	Query the HDCP notification.
HDCP status (valid for HDMI inputs and HDMI outputs only)			
Query input	Esc|I[X1]HDCP←	[X33]← HdcpI[X1]*[X33]←	Query the HDCP status of the current input [X1]. (verbose mode response)
Query output	Esc|O[X2]HDCP←	[X33]← HdcpO[X2]*[X33]←	Query the HDCP status of the HDMI output [X2]. (verbose mode response)
HDCP input authorization (valid for HDMI inputs only)			
Enable HDCP authorization	Esc|E[X1]*1HDCP←	HdcpE[X1]*1←	Enable HDCP authorization for input [X1] (default).
Disable HDCP authorization	Esc|E[X1]*ØHDCP←	HdcpE[X1]*Ø←	Disable HDCP authorization for input [X1].
Query notification	Esc|E[X1]HDCP←	[X49]←	Query HDCP authorization status for input [X1].

NOTE: [X1] = Input selection: 1 to 5
[X2] = Output selection: 0 = All outputs (default), 1 = Analog (VGA, YUVp, HDTV), 2 = HDMI, 3 = 3G/HD-SDI, 4 = None
[X3] = Input video format: 0 = No signal detected, 1 = RGB, 2 = YUV Auto, 3 = RGBcvS, 4 = S-video, 5 = Composite, 6 = DVI/HDMI (Only available for inputs 3, 4, and 5), 7 = Auto detect (default for inputs 1 and 2)
[X9] = Enable/disable: 0 = Off/disable, 1 = On/enable
[X28] = Overscan (applied to SMPTE [NTSC/PAL - 480p -1080p] input rates), 0 = 0.0% (default for RGB), 1 = 2.5% (default for YUV Auto, RGBcvS), 2 = 5.0% (default for S-video, Composite). See [X28] for full details.
[X33] = HDCP status (valid only on HDMI/DVI outputs): 0 = no sink or source detected, 1 = sink or source detected with HDCP, 2 = sink or source detected but no HDCP is present
[X49] = HDMI Input HDCP authorization status: 0 = Block HDCP encryption, 1 = Allow HDCP encryption (default for inputs 3, 4, and 5)

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Genlock			
Disable genlock	[Esc]0GL0K←	G1ok0←	Disables global input lock/genlock (default).
Enable input signal genlock	[Esc]1GL0K←	G1ok1←	Locks the output refresh rate to the selected input's refresh rate.
Enable SDI genlock	[Esc]2GL0K←	G1ok2←	Locks the output refresh rate applied genlock signal (D models only).
View genlock setting	[Esc]GL0K←	[X47]←	View the current genlock setting.
View genlock status	[Esc]41STAT←	[X48]← 41Stat• [X48]←	View the current genlock status. (<i>verbose mode response</i>)
Video signal presence			
View signal presence	0LS←	[X44]*[X44]*[X44]*[X44]*[X44]←	Input 1*2*3*4*5. ([X44] ; 0 = no input, 1 = input detected)
Hardwired IR port			
Disable IR disable (allows IR)	65*0#	IRDisable0←	Enables the hard wired port and allows IR.
Enable IR disable (blocks IR)	65*1#	IRDisable1←	Disables the hard wired port (default).
View IR disable setting	65#	[X9]←	View the current IR Disable setting.
Picture In Picture			
NOTE: HDMI input 5 cannot be used for PIP.			
PIP on/off			
PIP on	[Esc][X27]PIP←	Pip[X27]←	Turn on PIP and display input [X27] . [X27] is a two digit response (for example, 01).
PIP off	[Esc]0PIP←	Pip00←	Turn PIP off.
View PIP selection	[Esc]PIP←	[X27]←	View PIP selection ([X27] is a two digit response, for example, 01).
Swap main/PIP			
Swap	%←	Tke←	Swap between main and PIP window.
On-Screen menu configuration			
Menu time-out			
NOTE: Setting the time-out to 501 disables the OSD time-out (never times out). Setting the time-out to 0 disables the OSD.			
Set menu time-out	[Esc][X25]MDUR←	Mdur[X25]←	Set the OSD to [X25] seconds
View time-out	[Esc]MDUR←	[X25]←	View time-out settings

NOTE: **[X9]** = Enable/Disable: 0 = Off/disable, 1 = On/enable
[X25] = On-screen menu time-out: (default = 3 seconds)/ Output sync time-out (default = 501 - Never)
0 = OSD never displayed/output sync is instantly disabled with no active input,
1 to 500, in 1 second increments, 501 = OSD never times out/output sync never times out
[X27] = PIP window input selection: 0 to 4 (0 = Off)
[X44] = Video Signal Status: 0 = Video / TMDS signal not detected, 1 = Video / TMDS signal detected
[X47] = Input signal/SDI genlock: 0 = Disabled (default), 1 = Input signal enabled, 2 = SDI genlock enabled. [See command description](#) for details.
[X48] = Input signal / genlock Status: 0 = genlock disabled, 1 = genlock enabled; not locked, 2 = genlock enabled; locked.
[See command description](#) for full details.

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Reset commands			
Erase user supplied web pages and files ^{24 28}	Esc <filename>EF←	Del•<filename>←	Erase named files.
Erase current directory and files ^{24 28}	Esc / EF←	Dd1←	Erase current directory and its files.
Erase current directory and subdirectories ^{24 28}	Esc / / EF←	Dd1←	Erase current directory and its subdirectories.
Erase flash memory ²⁴	Esc ZFFF←	Zpf←	Erase the flash memory.
Reset all device settings to factory default settings ²⁴	Esc ZXXX←	Zpx←	Retains Ethernet settings
Absolute system reset ²⁴	Esc ZQQQ←	Zpq←	Includes resetting networking to DHCP = ON.
Absolute system reset (but retain IP) ²⁴	Esc ZY←	Zpy←	
<p>NOTE: This reset EscZY is similar to ZQQQ but excludes IP address, subnet mask, gateway addresses, unit name, DHCP setting, and port mapping (telnet/web/direct access) in order to maintain communications with device. Recommended after a firmware update.</p>			
Information request			
General information	I / i	Vid[x1]•Aud[x1]•Vtyp[x3]•Std[x10]•Blk[x10]•Hrt[x13]•Vrt[x13]•Pip[x1]←	
<p>NOTE: Aud "[x1]" response is a "-" on the non audio model. "Vtyp" returns to the detected input type ([x1]*\).</p>			
Query firmware version	Q / q	x . xx←	View firmware version.
Query full firmware version	*Q / *q	x . xx . xxxx←	View full firmware version details.
Query part number	N / n	zz - zzz - zz←	View part number.
View internal temperature	Esc 2ØSTAT←	Stat2Ø•[x11]←	Temperature in degrees Celsius.

NOTE: [x1] = Input selection, 1 to 5
[x3] = Input video format, 0 = No signal detected (only valid for detected input format query, such as [x1]*\), 1 = RGB, 2 = YUV Auto, 3 = RGBcvS, 4 = S-video, 5 = Composite, 6 = DVI/HDMI (Only available for IN3, IN4, and IN5)
[x10] = Input standard, 0 = No signal detected (current input), 1 = NTSC 3.85, 2 = PAL, 3 = NTSC 4.43, 4 = SECAM
- = N/A (occurs when input is an active RGB, YUV Auto [but not NTSC/PAL], or HDMI signal)
[x11] = Internal temperature (in degrees Celsius)
[x13] = Horizontal and vertical frequencies (format is three digit with single decimal and leading zeros for example, 075.3)

Command	ASCII Command (host to scaler)	Response (scaler to host)	Additional Description
Backup/Restore configuration			
<p>NOTE: {<i>config type</i>} = 0 = IP config (ip.cfg), 1 = event config (event.cfg), 2 = box specific parameters (box.cfg), The files are stored on directory /nortxe-backup created on the box by the "save" commands.</p>			
Save device configuration	<code>[Esc]1*{<i>config type</i>} XF←</code>	<code>Cfg1*{<i>config type</i>}↵</code>	Save unit configuration to file system.
Restore device configuration	<code>[Esc]0*{<i>config type</i>} XF←</code>	<code>Cfg1*{<i>config type</i>}↵</code>	Restore unit configuration from file system.
Product naming			
<p>NOTE: The 24 superscript as shown below, indicates that the user will get an E24 error on IPLink-based device (such as the DVS 605) if the user is not an Administrator when trying to alter names.</p>			
Set unit name ²⁴	<code>[Esc]X12CN←</code>	<code>Ipn•X12↵</code>	Set unit name to X12.
Set unit name to factory default ²⁴	<code>[Esc]•CN←</code>	<code>Ipn•X50↵</code>	Set unit name to default X50.
View unit name	<code>[Esc]CN←</code>	<code>X12↵</code>	View unit name.

NOTE: X12 = Unit Name is a text string of up to 24 characters drawn from the alphabet (A-Z), digits (0-9), and the minus sign/hyphen (-). The first character must be an alpha character. The last character must not be a minus. No blank or space characters are permitted, and no distinction is made between upper and lowercase
X50 = Default Name: combination of model name and last 3 pairs of MAC address (for example DVS-605-Series-07-8C-EC).

SIS Command and Response Table for IP Control Port

Command	ASCII (Telnet) (host to processor)	URL Encoded (Web) (host to processor)	Response (processor to host)	Additional description
Ethernet data port				
Set current connection port timeout	<code>[Esc]0 * [X69] TC ←</code>	<code>W 0 %2A [X69] TC |</code>	<code>Pt1 0 * [X69] ←</code>	
View current connection port timeout	<code>[Esc]0TC ←</code>	<code>W 0TC |</code>	<code>[X69] ←</code>	
Set global IP port timeout	<code>[Esc]1 * [X69] TC ←</code>	<code>W 1 %2A [X69] TC |</code>	<code>Pt1 1 * [X69] ←</code>	
View global IP port timeout	<code>[Esc]1TC ←</code>	<code>W 1TC |</code>	<code>[X69] ←</code>	
Firmware version requests				
NOTE: An asterisk (*) after the version number indicates the version currently running. Caret (^) indicates bad checksum/invalid load. Question marks (?) indicate version not loaded.				
Query firmware version	Q or 1Q	Q or 1Q	<code>[X11] ←</code>	Show the processor's firmware version number (<code>[X11]</code>) to two decimal places. Gives the number of the currently running version of the user-updatable firmware.
Query verbose version information	0Q	0Q	All responses from 2Q-3Q-4Q ←	Show bootstrap, factory-installed, and updated firmware versions. (See 2Q, 3Q, and 4Q, below.)
Example:	1Q	1Q	1.01	
Query bootstrap version	2Q	2Q	<code>[X11] ←</code>	The bootstrap firmware is not user-replaceable but you may need this information for troubleshooting.
Example:	2Q	2Q	0.06	
Query factory firmware version	3Q	3Q	<code>[X11]</code> (plus web ver.-desc-date/time)←	Factory-installed firmware is not user replaceable. This firmware is the version the processor reverts to after a mode 1 reset (see "Operation" section).
Example:	3Q	3Q	1.00(1.37-DVS 605 Series -Fri, 12 Aug 2012 03:28:10 GMT)	In this example, the factory firmware version is 1.00, (the kernel version 1.37), for the DVS 605, dated 12 August, 2012.

NOTE: `[X11]` = Version number (listed to 2 decimal places)

`[X69]` = The number of seconds before timeout on the IP connection: (min = 1; max = 65000; default = 30 = 300 seconds)

Command	ASCII (Telnet) (host to processor)	URL Encoded (Web) (host to processor)	Response (processor to host)	Additional description
Query updated firmware version	4Q	4Q	X11 ←	Use this command to find out which version of firmware has been uploaded into the processor post-factory.
<i>Example:</i>	4Q	4Q	1.01 * (1.46-DVS 605 Series -Mon, 17 Jan 2012 17:03:46 GMT)	In this example, firmware version is 1.01, kernel version 1.46, for DVS 605, dated 1 Jan, 2012..
Information requests				
Request processor part number	N	N	60-1059-XX ←	Show processor part number.
Request model name	1i	1i	DVS 605 X ←	Show processor model name.
Request model description	2i	2i	Extron Electronics Digital Video Scaler ←	Show type of unit.
Request system memory usage	3i	3i	# Bytes used out of #Kbytes ←	Show amount of memory used and total available memory for system operations.
Request user memory usage	4i	4i	# Bytes used out of #Kbytes ←	Show amount of user memory used and total available user memory.
IP setup commands				
Set unit name to factory default ²⁴	Esc • CN ←	W%20CN |	lpn • X49 ←	X49 is the name the processor was shipped with: DV605-##-##-##, a combination of the model name and the last 3 pairs of hex numbers in the processor's MAC address (for example, DV5304-00-02-3a).
Read unit name	Esc CN ←	WCN |	X12 ←	X12 is the processor's current unit name. X49 is its factory default name.
Set time/date ²⁴	Esc X13 CT ←	W X13 CT |	lpt • X13 ←	X13 is local date and time format. The set format is MM/DD/YY-HH:MM:SS. <i>Example:</i> 11/18/12-10:54:00
Read time/date	Esc CT ←	WCT |	X13 ←	The Read format is <i>day of week DD month year HH:MM:SS</i> . <i>Example:</i> Tue, 18 Nov 2012 18:19:33.
Set DHCP on ²⁴	Esc 1DH ←	W1DHI	ldh1 ←	
Set DHCP off ²⁴	Esc 0DH ←	W0DHI	ldh0 ←	

NOTE: **X11** = Version number listed to 2 decimal places
X12 = Name is a text string of up to 24 characters drawn from the alphabet (A-Z), digits (0-9), and the minus sign/hyphen (-). The first character must be an alpha character. The last character must not be a minus. No blank or space characters are permitted, no distinction is made between upper and lowercase.
X13 = Local date and time format **Set** format (MM/DD/YY-HH:MM:SS); for example, 06/21/02-10:54:00. **Read** format (day of week, date month year (HH:MM:SS)), for example, Thu, 20 Feb 2003 18:19:33
X49 = Default Name: combination of model name and last 3 pairs of MAC address (for example DV5-605-Series-07-8C-EC)

Command	ASCII (Telnet) (host to processor)	URL Encoded (Web) (host to processor)	Response (processor to host)	Additional description
View DHCP mode	Esc DH ←	WDHI	ldh X5 ←↓	X5 = 0 (off) or 1 (on).
Set IP address ²⁴	Esc X14 CI ←	W X14 CI	lpi • X14 ←↓	X14 = IP address (xxx.xxx.xxx.xxx). Leading zeros in each of the four fields are optional in setting values.
Read IP address ²⁴	Esc CI ←	WCII	X14 ←↓	Leading zeros in each of the four fields are suppressed in returned values.
Read hardware address (MAC)	Esc CH ←	WCHI	X18 ←↓	X18 = hardware media access control (MAC) address (xx-xx-xx-xx-xx-xx).
Set subnet mask ²⁴	Esc X19 CS ←	W X19 CS |	lps • X19 ←↓	X19 is the subnet mask (xxx.xxx.xxx.xxx). Syntax is the same as for the IP addresses. Leading zeros are optional in setting values.
Read subnet mask	Esc CS ←	WCS |	X19 ←↓	Leading zeros are suppressed.
Set gateway IP address ²⁴	Esc X14 CG ←	W X14 CG |	lpg • X14 ←↓	X14 is the IP address. Leading zeros are optional.
Read gateway IP address	Esc CG ←	WCG |	X14 ←↓	
NOTE: Changes made to any Ethernet settings do not take effect until the reboot networking command (2BOOT) is issued.				
Reboot network	Esc 2BOOT ←		Boot2 ←↓	Restarts network after IP address or DHCP changes.

NOTE: **X5** = On/Off 0 = off/disable, 1 = on/enable
X13 = Local date and time format **Set** format (MM/DD/YY-HH:MM:SS); for example, 06/21/02-10:54:00. **Read** format (day of week, date month year (HH:MM:SS)), for example, Thu, 20 Feb 2003 18:19:33
X14 = IP address (xxx.xxx.xxx.xxx); leading zeros in each of 4 fields are optional in setting values, and are suppressed in returned values
X18 = Hardware (MAC) address (xx-xx-xx-xx-xx-xx)
X19 = Subnet mask (xxx.xxx.xxx.xxx). Leading zeros are optional in setting values in each of four fields, and are suppressed in returned values.
X33 = Password (12 characters = maximum length; no special characters are allowed)

Command	ASCII (Telnet) (host to processor)	URL Encoded (Web) (host to processor)	Response (processor to host)	Additional description
<p>NOTE: A user password cannot be assigned if an administrator password does not exist. Entering a password when the DVS 605 has not been configured yields an E14 response from the processor. If the administrator password is cleared (removed), the user password is also removed.</p>				
Read administrator password	Esc CA←	WCA|	X33 ↵	
Set administrator password ²⁴	Esc X33 CA←	W X33 CA|	lpa• X33 ↵	Set the administrator access password. X33 is 4-12 alphanumeric characters. The password is case sensitive. Special characters (spaces or symbols) are not allowed.
Clear administrator password ²⁴	Esc •CA←	W%20CA|	lpa•↵	Clear/remove all passwords (administrator and user)
Set user password ^{14,24}	Esc X33 CU←	W X33 CU|	lpu• X33 ↵	Set the user access password. X33 is 4-12 alphanumeric characters. The password is case sensitive. Special characters (spaces or symbols) are not allowed.
<p>NOTE: A user password cannot be assigned if an administrator password does not exist.</p>				
Clear user password ²⁴	Esc •CU←	W%20CU|	lpu•↵	This clears the user password only.
Read user password ²⁴	Esc CU←	WCU|	X33 ↵	
Set verbose mode ²⁴	Esc X22 CV←	W X22 CV|	Vrb X22 ↵	Set verbose mode.
<p>NOTE: The processor can send out unsolicited information (such as notice of a volume or input change or a change in some other setting). That is called verbose (wordy) relationship between the processor and a connected device. For a direct RS-232/422 connection, the processor is set for Verbose mode by default. When the DVS 605 is connected via Ethernet, Verbose mode is disabled by default in order to reduce the amount of communication traffic on the network. If you want to use the Verbose mode with a processor connected via Ethernet, this mode must be set to On each time you reconnect to the processor.</p>				
Read verbose mode	Esc CV←	WCV|	X22 ↵	
Read connection's security level	Esc CK←	WCK|	X52 ↵	

NOTE: **X22** = Verbose/response mode (Default = 0 for Telnet connections; 1 for RS-232 host control). 0 = clear/none, 1 = verbose mode, 2 = tagged responses for queries, 3 = verbose mode and tagged responses for queries. If tagged responses are enabled, all read commands will return the constant string + the data, like setting the value does (for example command: Esc CN } response: lpn•x12).

X33 = Password (12 characters = maximum length; no special characters are allowed)

X52 = Connection's security level: 0 = anonymous, 1 – 10=extended security levels 1 thru 10, 11 = user, 12 = administrator

Command	ASCII (Telnet) (host to processor)	URL Encoded (Web) (host to processor)	Response (processor to host)	Additional description
Re-map port designations				
Set Telnet port map ²⁴	<code>Esc|port #|MT ←</code>	<code>W|port #|MT |</code>	<code>Pmt|port #| ←</code>	
Reset Telnet port map ²⁴	<code>Esc|23|MT ←</code>	<code>W23|MT |</code>	<code>Pmt00023 ←</code>	Set Telnet to the default port (23)
Disable Telnet port map ²⁴	<code>Esc|0|MT ←</code>	<code>W0|MT |</code>	<code>Pmt00000 ←</code>	
Read Telnet port map	<code>Esc|MT ←</code>	<code>WMT |</code>	<code>{port #}| ←</code>	
Set Web port map ²⁴	<code>Esc|port #|MH ←</code>	<code>W|port #|MH |</code>	<code>Pmh|port #| ←</code>	
Reset Web port map ²⁴	<code>Esc|80|MH ←</code>	<code>W80|MH |</code>	<code>Pmh00080 ←</code>	
Disable Web port map ²⁴	<code>Esc|0|MH ←</code>	<code>W0|MH |</code>	<code>Pmh00000 ←</code>	
Read Web port map ²⁴	<code>Esc|MH ←</code>	<code>WMH |</code>	<code>{port #}| ←</code>	Set Web port to default value of 80
Listing connections				
Get connection listing	<code>Esc|CC ←</code>	<code>WCC |</code>	(See below.)	
				Remote client IP address: port number; time/date when connection was made, total connection time ←
				Remote client IP address: port number; time/date when connection was made, total connection time ←
				Remote client IP address: port number; time/date when connection was made, total connection time ←
				...
				Total clients • connections available ←

Command	ASCII (Telnet) (host to processor)	URL Encoded (Web) (host to processor)	Response (processor to host)	Additional description
Directory commands				
Change/create directory	<code>[Esc]{path}/{directory}/CJ←←</code>	<code>W {path}/{directory}/CJ</code>	<code>Dir•{path}/{directory}/←←</code>	
NOTE: A directory does not actually exist until a file has been copied into the path.				
Move back to root directory	<code>[Esc] / CJ←←</code>	<code>W%2FCJ</code>	<code>Dir•/←←</code>	
Move up one directory	<code>[Esc] ..CJ←←</code>	<code>W%2E%2ECJ</code>	<code>Dir•{path}/ {directory}/←←</code>	
View current directory	<code>[Esc] CJ←←</code>	<code>WCJ</code>	<code>{path}/{directory}/←←</code>	
File erase commands				
Erase user-supplied file ^{24, 28}	<code>[Esc] {filename} EF←←</code>	<code>W {filename} EF</code>	<code>Del • {filename}←←</code>	
Erase current directory and its files ^{24, 28}	<code>[Esc]/EF←←</code>	<code>W%2FEF</code>	<code>Ddl←←</code>	
Erase current directory and subdirectories ^{24, 28}	<code>[Esc]/EF←←</code>	<code>W%2F%2FEF</code>	<code>Ddl←←</code>	

Using DVS 605 Configuration Software

The DVS 605 Configuration Software Program (EC) offers another way to control the DVS 605 via USB, RS-232, or Ethernet connection in addition to the SIS commands.

This section describes EC installation, communication, and control, and the topics include:

- [Installing the Software](#)
- [Starting the DVS 605 Configuration Software](#)
- [Using the DVS 605 Configuration Software — an Overview](#)

The graphical interface includes the same functions as those on the device front panel with additional features that are only available through the software.

The control software is compatible with Windows 98, Windows NT, Windows 2000, Windows XP and Windows 7. The software program is included on the Extron software DVD, and updates can be downloaded from the Extron web site (www.extron.com).

Installing the Software

The EC software can be installed onto the hard drive of a connected PC either directly from the supplied DVD, or downloaded from the Extron web site.

Installation from the DVD

1. Insert the DVD into the applicable drive. The DVD self starts.

NOTE: The DVD starts only if you have a DVD drive on your PC.

The Extron software window appears.



Figure 31. Example of DVD Software Window

2. If the disc does not start automatically, run LAUNCH.EXE from the disc.
3. Follow the instructions that appear on the screen.

By default, the installation creates a C:\Program Files\Extron\DVS 605 Configuration Software directory and places a shortcut icon in it.

Installation from the Website

1. On the Extron web site (www.extron.com), select the **Download** tab.
2. On the Download Center screen, select **Software** from the left side-bar menu.
3. Locate the DVS 605 Configuration Software file from the list and click on it.
4. Follow the on-screen instructions to download the program to your PC.

Starting the DVS 605 Configuration Software

1. Click **Start > Programs > Extron Electronics > DVS 605 Configuration Software**.
Alternatively, if an icon was installed on the desktop, EC can be started by double-clicking on the icon.
The Device Selection window appears.

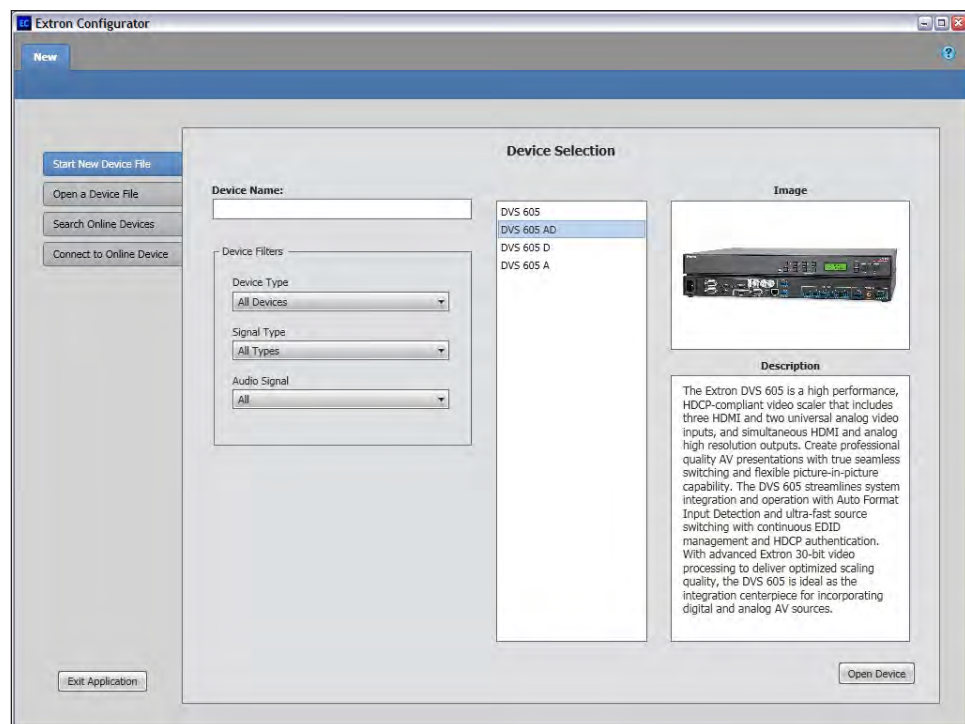


Figure 32. DVS 605 Configuration Software Device Selection Window

2. Select the desired device either:
 - a. from the list

NOTE: Use the filters to narrow down the list.

or

 - b. In the **Device Name** field, enter the name of the device.

or

 - c. Click on **Open a Device File**, **Search Online Devices**, or **Connect to Online Devices** buttons.

See the *DVS 605 Configuration Software Help* file for full details.

3. Click **Open Device**. A new tab opens from which you can configure the device.

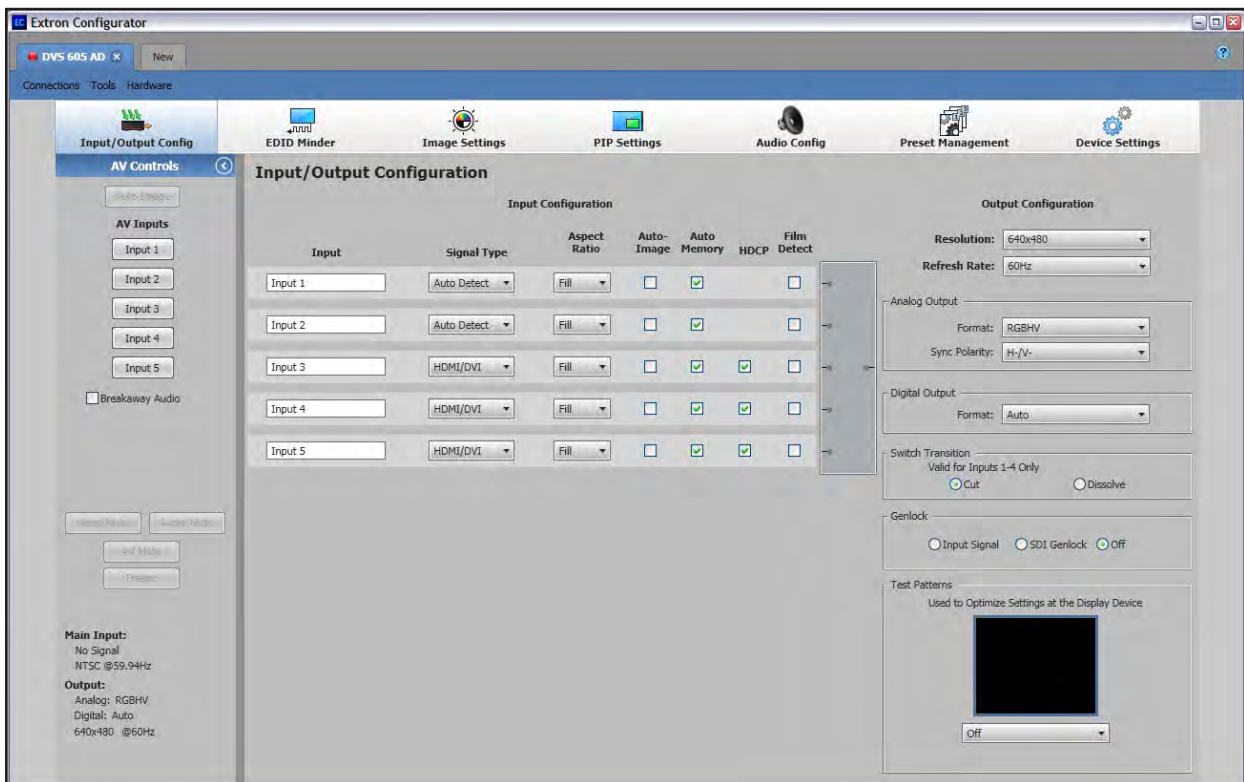


Figure 33. New Device Page (in emulation mode)

Using the DVS 605 Configuration Software — an Overview

NOTE: For general software navigation see the “Using Default Web Pages” section, or open the *DVS 605 Configuration Software Help* file.

There are three main menus shown at the top of the window. These are Connections, Tools, and Hardware.

Connections Menu

This menu has two options: Connect and Disconnect.

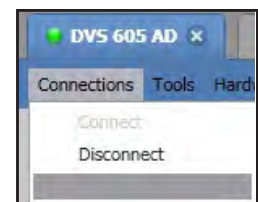
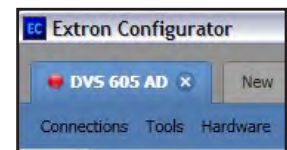
Connect

This allows the user to connect to the device that is already set up in emulation mode on the configuration page. The page goes from emulation mode to live mode and shows the connected devices' current configuration settings. The tab indicator changes from red (not connected) to green (connected).

NOTE: If a device is already connected, the Connect option is disabled until the device is disconnected or the connection times out.

Disconnect

This allows the user to disconnect from the connected device and return to emulation mode.



Tools Menu

This menu has two options: Trace Window and Firmware Update.



Trace Window

This allows the user to view the data sent to and from the device in a separate window. This option is useful for debugging purposes. When selected a separate window opens showing the transmitted and received data.

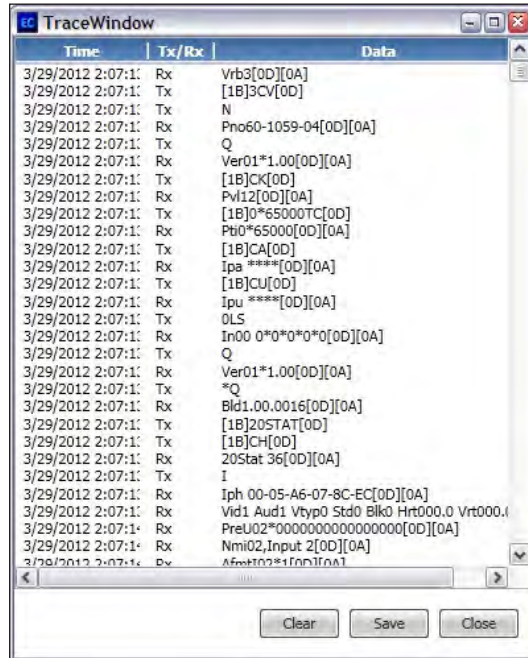


Figure 34. Trace Window

Firmware Update

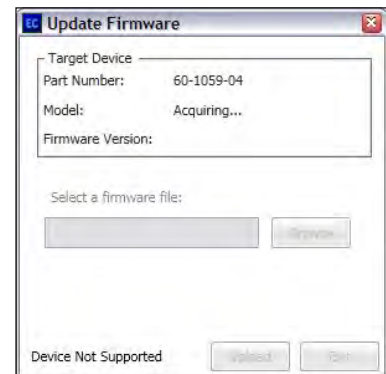
This allows the user to upload the latest firmware to the device.

NOTE: The latest device-specific firmware is available at www.extron.com to download to a PC connected to the device.

When selected a separate window opens and the details of the device and current installed firmware is acquired.

To update the firmware:

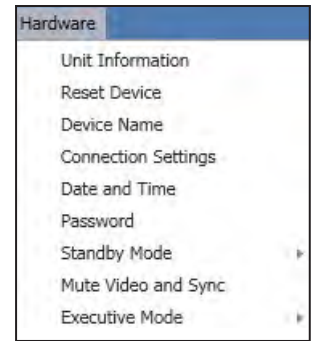
1. Browse to and select the downloaded firmware file. Valid firmware files have an EFF or ESF file extension.
2. Click **Open**. This returns you to the Update Firmware dialog box.
3. Click **Upload**. The progress bar shows the progress of the firmware upload to the device. After uploading is completed, the device restarts. Reconnection to the device must be made to enable live configuration.



Hardware Menu

NOTE: This menu is available only for devices that are connected live.

This menu has nine options: Unit Information, Reset Device, Device Name, Connection Settings, Date and Time, Password, Standby Mode (Full Power and Low Power), Mute Video and Sync, and Executive Mode (Unlock front panel, Lock front panel, and Limit front panel).



Unit Information

This opens a dialog box which displays information about the connected device.

Reset Device

This opens a separate window and allows the user to reset the unit in one of three modes. For detailed information on the different reset modes, (see [Reset Device page](#)) and the “[SIS Communications and Control](#)” section.



Figure 35. Reset Window

1. Click the radio button for the reset mode desired and then click the **Save** button.
2. A confirmation dialog box opens. Click **Yes** to confirm, or **No** to abort the action.

Device Name

This opens a separate window displaying the current device name. This option allows the user to change the device name.

To change the name, type in a desired name and click **Save**.

NOTE: If the name is deemed invalid, an error dialog will show. Reenter the name. The name may be up to 24 alphanumeric characters in length, without spaces.

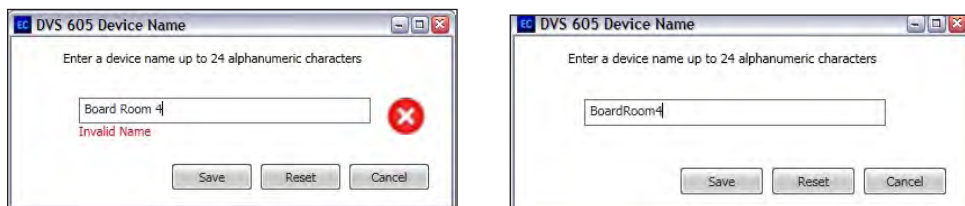


Figure 36. Device Name Window — Incorrect (left) and Correct (right) Naming

Click **Reset** to clear the name field of any name and return to the default unit name. Click **Save**.

Click **Cancel** to exit without changes. The previous name is retained.

Connection Settings

This opens a separate window that allows the user to adjust the settings for RS-232 communication and Ethernet communication to the device.

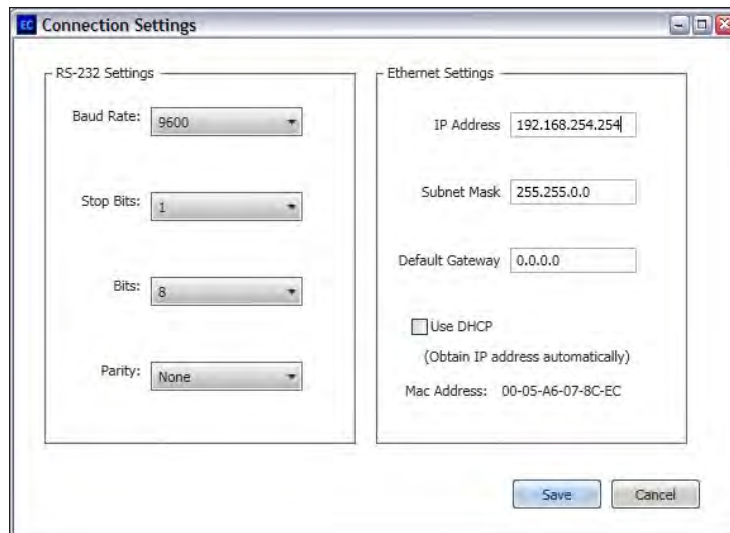


Figure 37. Connection Settings Window

RS-232 Settings — To change the settings select the appropriate value within the drop down boxes for each field: **Baud rate**, **Stop Bits**, **Bits**, and **Parity**.

Ethernet Settings — To change the settings enter select the appropriate addresses within the each field: **IP Address**, **Subnet Mask**, and **Default Gateway**. Click **Use DHCP** if an IP address is to be obtained automatically.

When proposed changes have been entered for either RS-232 or Ethernet connections, click **Save**. The device is updated with the new settings.

Date and Time

This opens a separate window, that allows the user to adjust the date and time settings.



Figure 38. Date and Time Settings Window

Either click the **Sync** button to sync the date and time of the unit to that of the connected PC, or manually adjust the date and time using the **Date** drop-down calendar and the **Time** field.

Click **Save** when changes have been completed.

Password

This opens a separate window that allows the administrator and user passwords to be changed.



Figure 39. Password Settings Window

- NOTES:**
- An administrator password must be entered before creating a user password.
 - Leave the fields blank in the Administrator or User section if you do not wish to create an administrator or user password.
 - Passwords have a 12-character limit and are case-sensitive. Characters that are not permitted include " / ", " \ ", " | ", " (space)", and " * ".
 - If the DVS 605 is password-protected, a user name entry is required for connection. Enter **admin** for administrator-level access or **user** for user-level access. These user names must be entered in lowercase characters.
 - After entering the appropriate user name, enter the associated password in the **Password** field.

To change the administrator password:

1. Enter the desired administrator password in the **Administrator Password** field.
2. Re-enter the administrator password in the **Confirm Password** field.
3. Click **Save**.

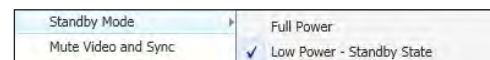
To create or change the user password.

1. Enter the desired user password in the **User Password** field.
2. Re-enter the user password in the **Confirm Password** field.
3. Click **Save**.

Standby Mode

This opens a separate window that allows the user to set the power mode (full or low).

Click the applicable mode. A check mark appears alongside the selected mode.



Standby state disables all video input processing and all video outputs to save energy when the DVS 605 is not in use.

Mute Video and Sync

Select this to mute or unmute video and sync to all outputs. A check mark appears alongside the menu name when mute is on, and the video mute button in the AV Controls panel indicates muted status.

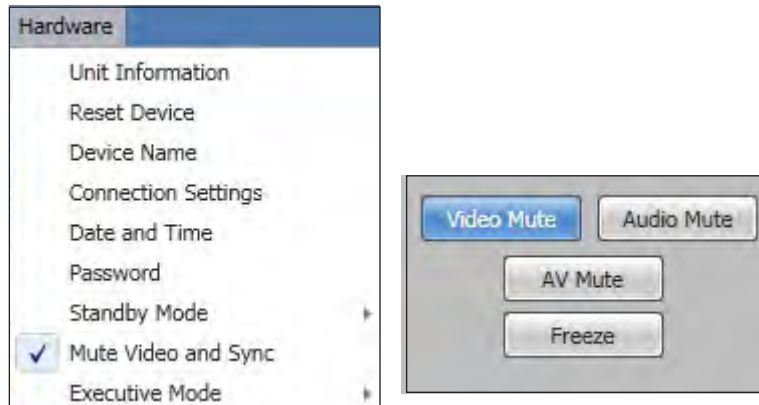
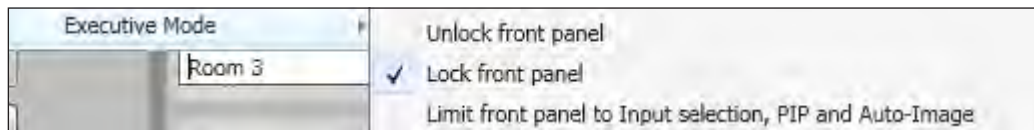


Figure 40. Mute Video and Sync on With Buttons Showing Video Mute Status

Executive Mode

Select this to turn on or off any selected Executive modes. A check mark appears alongside the menu name when any mode is on.



The modes are:

- Unlock front panel (use of all front panel buttons is available)
- Lock front panel (all front panel buttons are locked)
- Limit front panel to input selection, PIP, and Auto-Image

Using the Default Web Pages

The DVS 605 features an on-board web server, displayed as a set of default web pages. These pages allow you to control and operate the DVS 605 unit via a LAN or WAN connection through the RJ-45 port, using a web browser such as the Microsoft® Internet Explorer® 8 or later, Mozilla® Firefox® 6 or later, Google Chrome™ 9 or later, Apple® Safari® 4 or later.

NOTE: If you are using Internet Explorer, compatibility mode must be turned off. See the [“Turning Off Compatibility Mode”](#) section, for details.

This section gives an overview of the default web pages, which are always available and cannot be erased or overwritten.

Topics that are covered, include:

- [Accessing the Default Web Pages](#)
- [Navigating the Default Web Pages](#)

Accessing the Default Web Pages

Access the DVS 605 through the on-board web server pages as follows:

1. Double click the web browser icon on the PC desktop to launch the web browser.
2. Click in the browser’s **Address** field.
3. Enter the unit’s IP address in the browser’s **Address** field.

NOTE: If the local system administrators have not changed the value, the factory-specified default is DHCP set to On.

4. Press the keyboard <Enter> key. The DVS 605 checks to see if it is password protected. If it is not password protected, proceed to step 7. If it is password protected, the DVS 605 serves the Enter Network Password page.

NOTE: A user name entry (“user” or “admin”) is required.

5. Click in the **Password** field and type in the appropriate administrator or user password if prompted.
6. Click **OK**.

Turning Off Compatibility Mode

The DVS 605 default web pages do not support compatibility mode in Microsoft Internet Explorer.

To check compatibility view settings:

From the **Tools** menu of the browser, select **Compatibility View Settings**. The Compatibility View Settings dialog box opens.

Be sure that the **Display all websites in Compatibility View** check box is cleared, and that the IP address of the DVS 605 is not in the list of websites that have been added to Compatibility view

Navigating the Default Web Pages

The DVS 605 default web pages opens with two main pages: Configuration and Hardware. Below the tabs for each page is a global navigation bar with icons for ease of navigation through the various options. The two pages have specific groups of options.

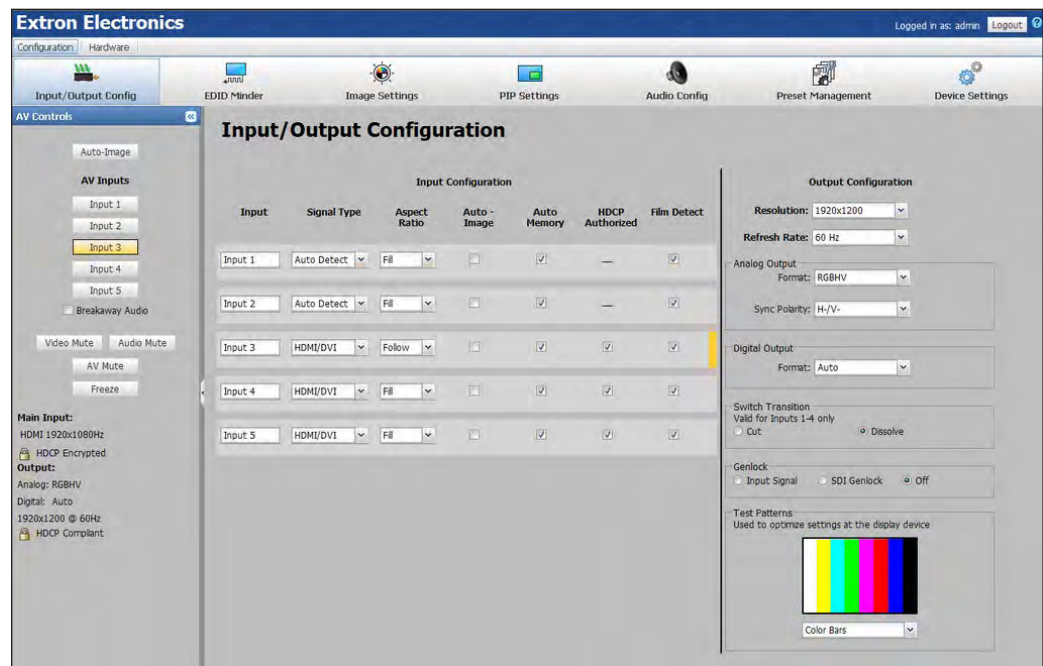


Figure 41. Default Web Pages open on the Configuration Page

Configuration Pages

NOTE: From Hardware pages, click on the Configuration tab .

The Configuration pages options are:

- Input/Output Configuration • EDID Minder • Image Settings • PIP Settings
- Audio Configuration • Preset Management • Device Settings.

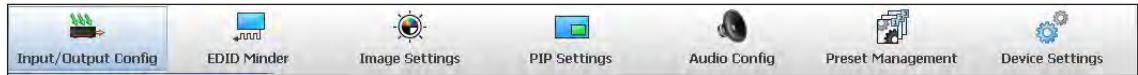
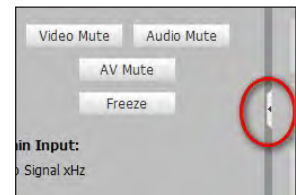


Figure 42. Global Navigation Bar for the Configuration Page

The browser screen is set out as two sections. These are AV Controls on the left, and the options page on the right.

AV Controls Panel

NOTE: This panel section can be hidden or revealed by clicking on the section handle (see image at right).



The AV Controls panel is used to control AV settings such as input selection and for performing a one-time Auto-Image to an input. Video and audio mute can be turned on or off, and image freeze can be invoked.

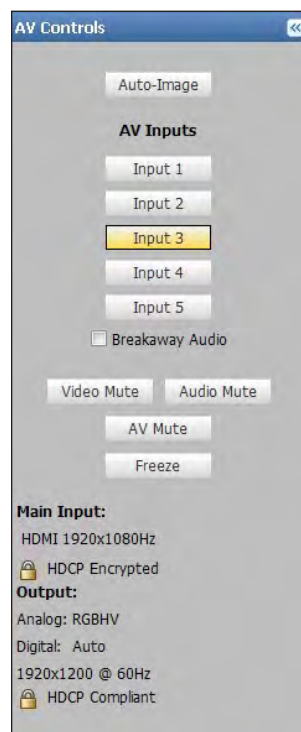


Figure 43. AV Controls Panel

At the bottom of the panel is a summary of the current active input and output status, which includes signal format and HDCP status.

Auto-Image button

Click on this button to start a one time Auto-Image on the currently selected input.

AV input buttons (inputs 1-5)

Click on these to select an input as desired. As a new one is selected, the summary within the panel changes to reflect the new input and output status.

Breakaway audio check box (audio models only)

Select this check box to enable audio breakaway. The input buttons separate into two columns: video and audio.

From the Video column, click the input button associated with the video to be used.

From the Audio column, click on the input button associated with the audio to be used.

- NOTES:**

 - Audio breakaway is disabled when PIP mode is active.
 - Audio breakaway is not available for inputs configured for digital audio format.
 - Video breakaway is not available from an input that has been configured for any digital audio format.
 - When in PIP mode, audio breakaway is not supported. Audio follows either the main window or the PIP window (set on the Devices Settings screen).

Clear the **Breakaway Audio** check box to disable the audio breakaway.

Video and audio mute buttons

Select **Video Mute** to mute only the video signal. The button turns blue.

Select **Audio Mute** to mute only the audio. The button turns red.

Select **AV Mute** to mute both video and audio simultaneously. The button turns red and the Video and Audio mute buttons are also activated.

To unmute any signal, click on the appropriate button. The button reverts to the default color, indicating the signal has been unmuted.

Freeze button

Select **Freeze** to freeze the current video image. The button turns blue, indicating the image is frozen.

Press it again to unfreeze the image. The buttons reverts to the default color.



Input/Output Configuration Page



Click on this button [Input/Output Config](#) to open to this page.

The Input Configuration panel consists of user configurable fields for each of the five inputs. These include; input naming, signal type, aspect ratio, Auto-Image, Auto Memory, HDCP Authorized status, and Film detection. There is also a visual indicator on the right side of the panel for the currently active video and audio inputs; for example in the image below input 2 is audio and Lab DVD is a video input.

Input	Signal Type	Aspect Ratio	Auto - Image	Auto Memory	HDCP Authorized	Film Detect
Room 3	RGB Scaled	Fill	<input type="checkbox"/>	<input checked="" type="checkbox"/>	—	<input checked="" type="checkbox"/>
Input 2	Auto Detect	Follow	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	—	<input checked="" type="checkbox"/>
Input 3	HDMI/DVI	Fill	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Lab DVD	HDMI/DVI	Follow	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Input 5	HDMI/DVI	Fill	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 44. Input Configuration Panel

Input (renaming)

To rename an input click inside the field and type in the desired name to identify the input. Input names have a 16-character limit. By default, the name associated with an input channel is Input <number>.

NOTE: Entering a single space character resets the name of the input to the default.

Signal type

The user can select the signal type for inputs 1 and 2 from **Auto Detect**, **RGB Scaled**, **Auto YUV**, **RGBcvS**, **S-Video**, and **Composite**. For inputs 3, 4, and 5, **HDMI/DVI** is the only available signal type.

For inputs 1 and 2, available signal types include:

- **Auto-Detect** — With this setting selected, whenever the device detects an input format change, it automatically sets the input signal type.
- **RGB Scaled**
- **Auto YUV** — With this setting selected, the device detects if YUVi or YUVp/HDTV is applied and sets the input accordingly.
- **RGBcvS**
- **S-Video**
- **Composite**

From the **Signal Type** drop-down list, select the video format associated with the input.

Aspect ratio

Select **Fill** or **Follow** from the drop-down list to set the aspect ratio.

- **Fill** — The input signal is scaled to fill the entire video output.
- **Follow** — Follows the signal aspect ratio, with respect to the current output resolution setting. A black letter box or pillar box bars may be applied for aspect ratio compensation.

Auto-Image

Select the check box to apply Auto-Image to the input, if desired. When selected, Auto-Image is applied whenever there is a change in the input sync.

Auto Memory

Select the check box to enable the Auto Memory, if desired. Auto Memory recalls input and image settings for signals that have previously been applied.

When Auto Memory is disabled, the DVS 605 treats every newly applied input as a new source.

[See the table in the "Auto Memory" section](#) for Auto Memory and Auto-Image relationship.

HDCP Authorized

Select the **HDCP Authorized** check box (inputs 3-5) in order to have the input report as an HDCP Authorized device. If the box is not checked the source will be blocked from encrypting its output. This may result in some content not being passed to the output.

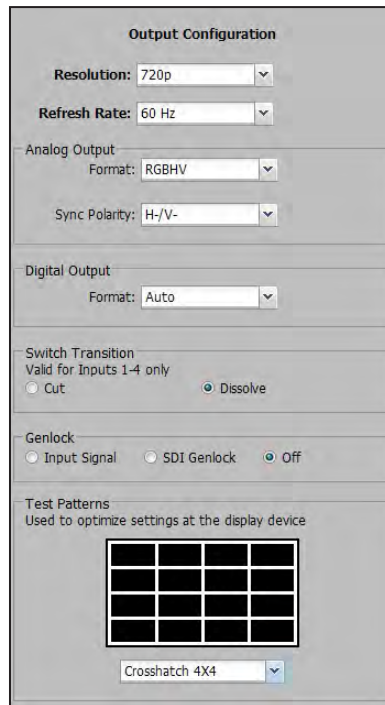
NOTE: The **HDCP Authorized** option is not available for the analog inputs 1 and 2.

Film Detect

Select these check boxes to enable 3:2, 2:2, and 24:1 film pulldown detection for NTSC/PAL/1080i input signals.

Output Configuration Panel

The right panel consists of user configurable fields for video outputs. These include: output resolution, refresh rate, signal format and sync polarity for the analog output, and signal format for the digital output. The switch transition mode between inputs can be set, and a test pattern selection is available for use in calibrating a connected display. The genlock settings can also be set on all models.



The screenshot shows the 'Output Configuration' panel with the following settings:

- Resolution:** 720p
- Refresh Rate:** 60 Hz
- Analog Output:**
 - Format: RGBHV
 - Sync Polarity: H-/V-
- Digital Output:**
 - Format: Auto
- Switch Transition:** Valid for Inputs 1-4 only. Options: Cut, Dissolve
- Genlock:** Input Signal, SDI Genlock, Off
- Test Patterns:** Used to optimize settings at the display device. A 4x4 grid of black squares is shown, with a dropdown menu set to 'Crosshatch 4X4'.

Figure 45. Input Configuration Panel

Resolution

Click on the arrow and from the drop-down list box select the applicable output resolution. The selectable resolutions include five user customizable ones: C1-C5.

[See the resolution and refresh rate table](#) for a full list. Default is 720p/60 Hz

Refresh rate

Click on the arrow and from the drop-down list box select the applicable refresh rate.

Analog signal format

Click on the arrow and from the drop-down list box select an applicable signal format. Selectable formats are: RGBHV (default), RGBS, RGBcvs, (Y, R-Y,B-Y bi-level), and (Y, R-Y,B-Y tri-level).

Analog sync polarity

Click on the arrow and from the drop-down list box select the applicable sync polarity. Choices are: H-/V- (default), H+/V-, H+/V+, H-/V+.

NOTE: The sync polarity option is only available when the output format is RGBHV.

Digital output signal format

Click on the arrow and from the drop-down list box select an applicable signal format. Selectable formats are: Auto (based on sink/ display EDID), DVI, HDMI RGB, HDMI YUV 444 Full, HDMI YUV 444 Limited, HDMI YUV 422 Full, HDMI YUV 422 Limited.

Switch transition

Select either mode, cut or dissolve, to set the transition effect when switching inputs.

Genlock

Where applicable, SDI genlock or input signal genlock can be applied, or genlock can be turned off. Select as desired.

See the [Genlock status section](#) on page 17 for details

NOTE: The SDI genlock option is available only on DVS 605 D and DVS 605 AD models.

Test pattern

To aid display device setup and optimization, select a test pattern from the drop-down list.

See the [Test Pattern section](#) for details.

NOTE: No input signal is needed when using a test pattern for display device setup.

EDID Minder Page

Extron EDID Minder® is an EDID management process that automatically manages the EDID information between a digital display device and one or more input sources.



Click on this button to open the EDID Minder page.

From this page an EDID data set can be assigned to any input with an Auto-Detect, an RGB, or an HDMI/DVI input type. The currently assigned EDID properties can be viewed and EDID files can be loaded to and from the DVS 605.

The screenshot shows the EDID Minder web interface. It features a filter section at the top with dropdown menus for Resolution and Refresh Rate, and a Clear button. Below the filter are three main sections: Favorites, Connected Outputs, and Available EDIDs. The Favorites section contains two blue icons for 720p @ 60 Hz and 1080p @ 60 Hz. The Connected Outputs section shows two green icons for VGA and HDMI, both at 0x0 @ 0 Hz. The Available EDIDs section contains several icons of various colors (blue, green, yellow) representing different EDID profiles. On the right side, there is an Output Resolution section with a dropdown menu set to 720p @ 60 Hz and buttons for Assign, Assign All, and Match Output. Below this is a table of INPUTS with columns for Source, Timings, Audio, and Format. The table lists five inputs with their respective settings. At the bottom right, there is a section for Extron DVS 605 AD with an Upload EDID to DVS 605 AD button.

Source	Timings	Audio	Format	
<input type="checkbox"/>	Input 1	N/A	None	VGA
<input checked="" type="checkbox"/>	Input 2	720p...	None	VGA
<input type="checkbox"/>	Input 3	1080p...	LPCM...	HDMI
<input type="checkbox"/>	Lab DVD	720p...	LPCM...	HDMI
<input type="checkbox"/>	Input 5	720p...	LPCM...	HDMI

NOTE: In the image above blue screens are factory loaded EDIDs, green screens are connected displays, and yellow are five custom user EDID locations that can hold a captured or uploaded EDID file.

Figure 46. EDID Minder Page

The EDID Minder screen displays a table of EDIDs and connected output devices, grouped as favorites, connected outputs, and available EDIDs. These are visually shown as colored output display icons: factory default EDIDs are blue, connected output devices are green, and custom loaded or saved EDIDs are yellow.

The EDID properties currently assigned to each input are displayed in the table of inputs. Audio and video formats for each input are also displayed. The audio input format listed in an input's EDID is determined by the Audio Input Format on the Audio Configuration page. Video input format is configured on the Input/Output Configuration page.

Assigning EDIDs

To assign EDID to selected inputs:

1. From the inputs screen (table of inputs) on the right, select the desired input or inputs (see figure below).
2. From the table, select an available EDID (represented by a blue, green, or yellow output display icon).
3. Click the **Assign** button to assign EDID to the selected input or inputs.



Figure 47. Assigning EDIDs

NOTE: If you do not assign any inputs but still click **Assign**, an error message is displayed.

To assign EDID to all inputs:

1. From the EDID table, select an available EDID (represented by a blue, green, or yellow output display icon).
2. Click the **Assign All** button.

NOTE: If you select **Assign All**, all input boxes, checked or unchecked, will be ignored and the EDID will be assigned to all inputs.

To match the selected inputs to the current output resolution:

1. From the inputs table on the right, select the desired input or inputs (see figure above).
2. In the Output Resolution section, click **Match Output**.

Image Settings Page

From this page signal sampling and picture control settings can be set, user and input presets can be saved and recalled, and overscan settings can be applied.



Click on this button to open the Image Settings page.

The screenshot shows the "Image Settings" web interface. It is divided into several sections: "Signal Sampling" with fields for Active Lines, Active Pixels, Horizontal Start, Vertical Start, Total Pixels, and Pixel Phase; "Picture Control" with sliders and dropdowns for Brightness, Contrast, Color, Tint, and Detail; "User Presets" and "Input Presets" sections for saving and recalling configurations; and an "Overscan" section with dropdowns for DVI/HDMI, RGB, YUV, RGBcvS, S-Video, and Composite. The interface uses a grey and white color scheme with blue accents for sliders and dropdowns.

Figure 48. Image Settings Page

Signal Sampling

In this section settings for the input signal of the currently selected input can be adjusted. Adjustable fields are: the number of active lines, active pixels, total pixels, horizontal and vertical start settings, and the pixel phase. In addition an Auto-Image (with Fill or Follow modes) can be executed on the input.

In the Signal Sampling section, adjust an input signal setting by entering a value or clicking the up ▲ and down ▼ arrows in the field associated with the setting. An asterisk beside a chosen value for a signal sampling setting indicates that it is a default value for the applied input signal.

An Auto-Image can also be executed on the current input. Auto-Image automatically sizes and centers the selected input. If an unknown input is connected to the device, the processor measures and estimates the resolution of the incoming video.

To perform an Auto-Image:

1. Click on the **Auto-Image** button. A drop-down list opens.
2. Select **Auto-Image**: with fill (to fill the entire video output) or **Auto-Image**: with follow (to maintain the aspect ratio of the input).

See [Auto-Image in the Input Configuration](#) section, for steps to set automatic activation.

Picture Control

This section shows the image settings for the selected input. These include brightness, contrast, color, tint, and detail, and can be adjusted and applied to that input.

To adjust the picture settings click and drag the associated slider for any image setting (brightness, contrast, color, tint, or detail) to the desired value.

Alternatively, you can enter a value within the field associated with the image setting, or click the up ▲ and down ▼ arrows and change the value in the field.

User Presets

In this section of the Image Settings page, the user can save or recall up to 16 user presets per input channel for the currently active input. The user presets contain only picture control properties.

Settings Included Within Presets				
Setting	User Preset	Input Preset	PIP Preset	Auto Memory
H/V Start		Yes		Yes
Active Pixels		Yes		Yes
Active Lines		Yes		Yes
Total Pixels		Yes		Yes
Phase		Yes		Yes
Brightness and Contrast	Yes	Yes		Yes
Color and Tint	Yes	Yes		Yes
Detail	Yes	Yes		Yes
Input Type		Yes		
Audio Input Gain and Attenuation		Yes		
Main Image/Window Size and Position	Yes	Yes	Yes	Yes
PIP Image/Window Size and Position			Yes	
Preset Name	Yes	Yes	Yes	
Main Input			Yes*	
PIP Input			Yes*	
Film Mode		Yes		
Presets Available	16 per input channel	128 global	16 global	32 per input channel
Recall location	Current input	Any input supporting input type saved in preset	Any input except input 5	Automatically recalled based on signal

* PIP presets can be recalled with or without the main and PIP inputs that were active when the preset was saved.

NOTE: "H/V Start" indicates the horizontal and vertical start.

Figure 49. Presets Settings

Input Presets

A total of 128 global input presets are available for the DVS 605. An input preset is a user-defined set of input and picture control settings that can be saved for each source within a system so that they can be recalled whenever the source is applied. Input presets are unique to the signal that was applied when the preset was initially saved. This type of preset saves specific settings for size, position, contrast, brightness, color and tint (if applicable), detail, and input configuration.

NOTE: An input preset can be recalled on any input supporting the input type that was active when the preset was saved. However, input presets only apply to the input resolution that was present when the preset was saved.

To create and save an input preset:

1. Adjust the signal sampling, picture control, and size settings (see the [“Size and Position”](#) section later in this guide) as desired.
2. From the **Preset Number** drop-down list select a preset number.
3. In the **Preset Name** field, enter a name for the preset.
4. Click **Save**. If an input preset already exists in this location, a confirmation dialog box opens. In the dialog box, click **Yes** to overwrite the previous input preset.

The settings are saved to the selected preset location to be recalled at a later time.

See the [“Preset Management Page”](#) section later on this guide, for information about renaming input presets.

To recall an input preset:

1. From the **Preset Number** drop-down list, select the preset to recall.
2. Click **Recall**. A confirmation dialog box opens.

NOTE: If an unassigned preset is selected, the **Recall** button is disabled.

3. In the dialog box, click **Yes**.

NOTE: Recalling a preset overwrites any adjustments to the settings of the current input. An input preset can also be recalled through the Preset Management screen.

See the [“Preset Management Page”](#) section for the procedure to delete an input preset.

Overscan

This mode zooms and crops SMPTE inputs to mask edge effects and ancillary data common in broadcast signals. Issuing an Auto-Image with overscan enabled, runs an Auto Phase routine (YUV and RGB only) and centers and sizes the input according to table values.

NOTE: Overscan is only applied to SMPTE input rates (NTSC, PAL, 480p, 576p, 720p, 1080i, or 1080p).

To set the overscan, select a percentage (0.0%, 2.5%, or 5.0%) from the drop-down list that is associated with the desired input signal type.

PIP Settings Page

In PIP mode, the DVS 605 can display two images on the screen simultaneously. From this page the PIP settings can be adjusted. This includes input selection, swapping between main and the PIP inputs, adjustment of the picture control settings, main and PIP window position and sizing, and the saving and recall of PIP presets can be made.

NOTE: When in PIP mode, audio breakaway is not supported. Audio follows either the main window or the PIP window (set on the Device Settings screen).

Click on this button  to open the PIP Settings page.

Figure 50. PIP Settings Page

PIP input selection

Inputs 1 through 4 can be selected as a PIP input. Click the button of an available input. The content of this input displays in the PIP window.

NOTES:

- The currently selected AV input is disabled in the list of available PIP inputs as the main input and PIP input cannot be the same.
- Input 5 cannot be selected as an input for PIP mode.
- The **PIP Off** and **Swap** buttons are disabled if PIP mode is not enabled.

To turn off the PIP feature simply click the **PIP Off** button.

To swap the active main window with the current PIP input, click the **Swap** button.

Snap PIP to

To snap (align) the PIP window to a corner of the main window, click **Top Left**, **Top Right**, **Bottom Left**, or **Bottom Right** within the Snap PIP display grid. This places the PIP window in the specified corner of the main window. When using the Snap To feature, the PIP window is always 25 pixels away from the edges of the output raster.

PIP picture controls

These PIP input settings include brightness, contrast, color, tint, and detail.

NOTES:

- Picture controls will not be applied if there is no input signal. Any changes made while there is no input signal will be lost when a signal is detected.
- After PIP is disabled, the configured PIP picture settings will still apply to the specified input.

To adjust PIP picture settings (brightness, contrast, color, tint, or detail) click and drag the associated slider to the desired value.

Alternatively, you can enter a value in the field associated with the picture setting, or click the up ▲ and down ▼ arrows.

Size and Position

In this section the size and position of the PIP windows and content, and the main windows and content can be adjusted. The settings can be saved in a PIP preset.

NOTE: Size and position settings of the PIP window, PIP content, main window, and main content are disabled if you are configuring the DVS 605 offline.

The position and size of the content or window can be adjusted using the values in the **Horizontal Position**, **Horizontal Size**, **Vertical Position**, and **Vertical Size** fields.

To adjust the position and size numerically:

1. In the Size and Position section, click the tab for the window (**Main Window** or **PIP Window**) or content (**Main Content** or **PIP Content**) that is to be adjusted.
2. Adjust the size by entering a value or clicking the up ▲ and down ▼ arrows in the **Horizontal Size** and **Vertical Size** fields.
3. Adjust the position by entering a value or clicking the up ▲ and down ▼ arrows in the **Horizontal Pos** and **Vertical Pos** fields.

NOTE: In steps 2 or 3, if a value above or below the accepted range is entered, a red border is displayed and a pop-up indicates the accepted minimum or maximum value.

PIP presets

Sixteen global PIP presets are available for the DVS 605. A PIP preset contains settings for the size and position of PIP. It also contains the main and PIP inputs that were active when the preset was saved. By default the first ten PIP presets have settings already associated with them, but they can be overwritten.

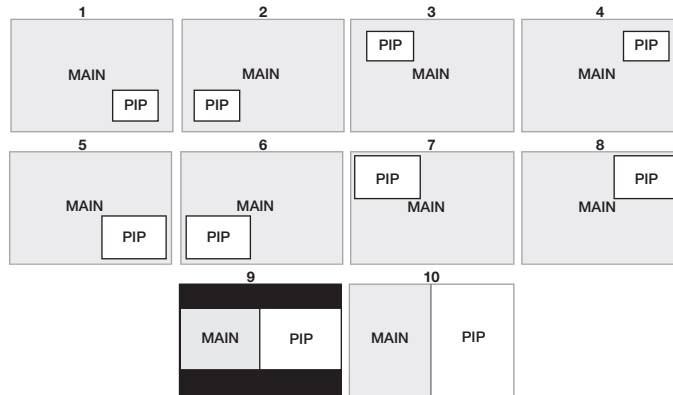


Figure 51. PIP Preset Default Window Locations

To create and save a PIP preset:

1. Click the button of an available input (1 - 4) to use as the PIP input.
2. Adjust the picture, size, and position settings as desired for the main and PIP windows.
3. From the **Preset Number** drop-down list in the PIP Presets section, select a number.
4. In the **Preset Name** field, enter a name for the PIP preset.

NOTE: PIP preset names have a 16-character limit.

5. Click **Save**.
6. Click **Yes** to overwrite the previous PIP preset.

The settings are saved to the PIP preset location to be recalled at a later time.

To recall a PIP preset:

1. From the **Preset Number** drop-down list select the preset to recall.
2. Click **Recall** to open a drop-down list from which to select **either**:
 - a. **Recall: Input, Size & Position** (recalls main and PIP inputs as well as size and position settings of main and PIP windows), **or**;
 - b. **Recall: Size & Position Only** (recalls only size and position settings of main and PIP windows).

A confirmation dialog box opens.

3. In the dialog box, click **Yes**.

NOTE: Recalling a preset overwrites any adjustments to the current PIP settings.

Audio Settings Page

Using this page each of the audio inputs can be configured, including setting the input format and the gain (for analog inputs). Also the audio output format can be set and adjusted.

NOTE: Audio inputs 1 and 2 are disabled for DVS 605 and DVS 605 D models. They do not support analog audio. Input gain cannot be adjusted for digital audio.



Click on this button to open the Audio Config page.

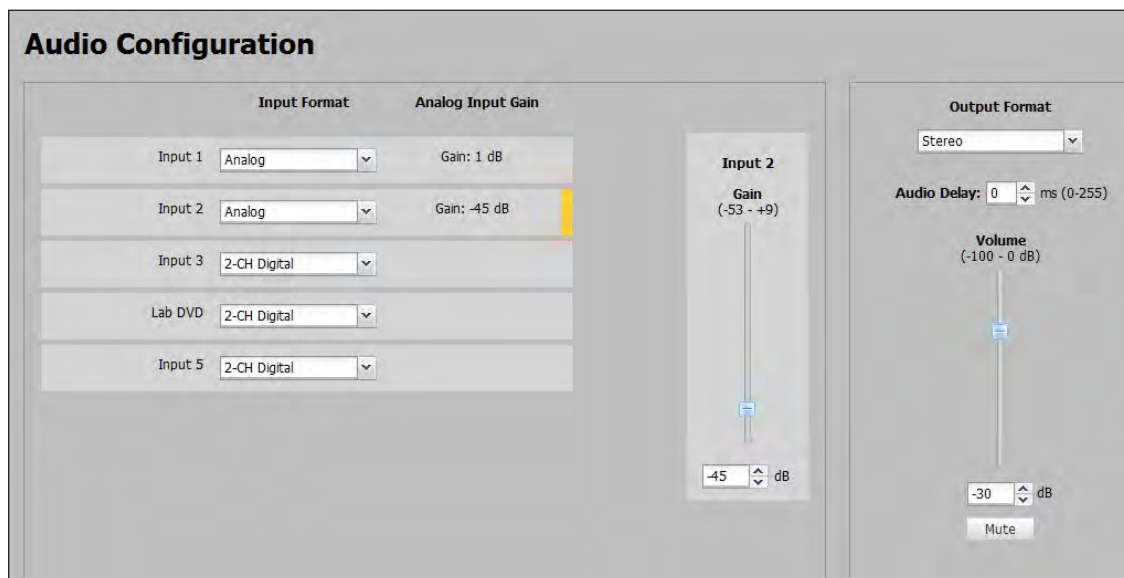


Figure 52. Audio Config Page

To configure audio inputs:

1. From the **Input Format** drop-down list, select the format associated with the input.

For inputs 1 and 2, available formats include:

- **None**
- **Analog** (audio models only)

For inputs 3, 4, and 5, available formats include:

- **None**
- **Analog** (audio models only)
- **2-CH Digital**
- **Full Digital**
- **2-CH - Auto** (audio models only)
- **Full - Auto** (audio models only)

NOTE: Auto modes uses digital audio when it is present, or the unit defaults to analog audio.

2. Click and drag the handle of the **Gain** slider, or click the up ▲ and down ▼ arrows in the field below the slider, or enter a value in the field.

NOTE: You can only adjust the gain and attenuation for an input that is in analog or Auto format. Gain only affects analog inputs

To configure audio output format:

1. From the **Output Format** drop-down list, select the format of the audio output. Available formats include:
 - Dual Mono
 - Stereo
2. Set the audio delay by clicking the up ▲ and down ▼ arrows or entering a value into the **Audio Delay** field. Audio delay can be set from 0 ms to 255 ms.

NOTE: The DVS 605 automatically delays audio signals to compensate for internal video processing

3. Click and drag the handle of the **Volume** slider, or click the up ▲ and down ▼ arrows, or enter a value in the field to adjust the audio output volume.

To mute the output audio, click the **Mute** button below the volume slider. The **Mute** button turns red.

Preset Management Page

This Preset Management page gives access to assigned input presets, user presets, and PIP presets. Each preset can be renamed, recalled or cleared. A brief description of the settings contained within each preset type is given at the top of each list.



Click on this button to open the Audio Config page.

The screenshot shows the "Preset Management" web page. It is divided into three main sections: "Input Preset", "User Preset", and "PIP Preset". Each section has a descriptive paragraph at the top and a table below. The "Input Preset" table has one row with "1" in the "Number" column and "c3" in the "Input Preset Name" column. The "User Preset" table is empty with the text "No Presets Defined". The "PIP Preset" table has 16 rows, each with a number from 1 to 16 and a corresponding preset name like "class 6", "PIP PRESET 02", etc. At the bottom of each section are buttons for "Recall", "Rename", and "Clear". The "Recall" button in the PIP section has a small dropdown arrow next to it.

Preset Management

Input Preset
Contains signal type, signal sampling, and picture control properties. This preset may be recalled on any input that supports the saved signal type.

Number	Input Preset Name
1	c3

Recall Rename Clear

User Preset
Contains picture control properties only. These presets are saved and recalled on the same input. There are 16 presets per input channel.

Number	User Preset Name
No Presets Defined	

Recall Rename Clear

PIP Preset
Contains selected inputs, window/image sizing and centering as a percentage of the current output resolution. Recall with or without the selected inputs.

Number	PIP Preset Name
1	class 6
2	PIP PRESET 02
3	class 15
4	PIP PRESET 04
5	PIP PRESET 05
6	PIP PRESET 06
7	PIP PRESET 07
8	PIP PRESET 08
9	PIP PRESET 09
10	PIP PRESET 10
11	PIP PRESET 11
12	PIP PRESET 12
13	PIP PRESET 13
14	PIP PRESET 14
15	PIP PRESET 15
16	PIP PRESET 16

Recall Rename Clear

Figure 53. Preset Management Page

NOTE: The column order for the listed presets can be changed. For example, the preset name can be displayed to the left of the preset number.

To change column order, click on a column title and drag and drop it to the left or right of the other column as desired.

To recall a preset:

1. Select the input preset, user preset, or PIP preset that is to be recalled.
2. Click the **Recall** button located in the same section of the screen.

When clicking **Recall** in the PIP Preset section, a drop-down list opens. Select either:

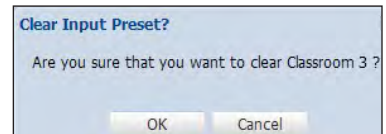
- a. **Recall: Inputs, Size & Position**, or
 - b. **Recall: Size & Position Only**
3. In the dialog box, click **Yes**.

To rename a Preset:

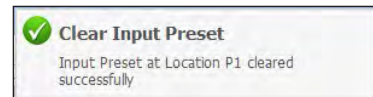
1. Select the input preset, user preset, or PIP preset that is to be renamed.
2. Click **Rename**. The cursor moves into the Name field.
3. In the **Name** field, enter a unique name for the selected preset.
4. Press <Enter> on the keyboard and the preset name is saved.

To clear a Preset:

1. Select the input preset, user preset, or PIP preset that is to be cleared.
2. Click the **Clear** button located in the same section of the screen. A confirmation dialog box opens.
3. Click **OK**. If the preset is an input preset or a user preset, the preset is removed entirely from the list. If the preset is a PIP preset, it is restored to factory default.



A dialog box opens confirming input clearance.



NOTE: A PIP preset cannot be cleared (deleted). It is restored to factory defaults.

Device Settings Page

This page allows you to configure the device settings associated with audio follow, IR control, HDCP notification, screen saver settings, and input auto switch enabling.



Click on this button to open the Device Settings page.

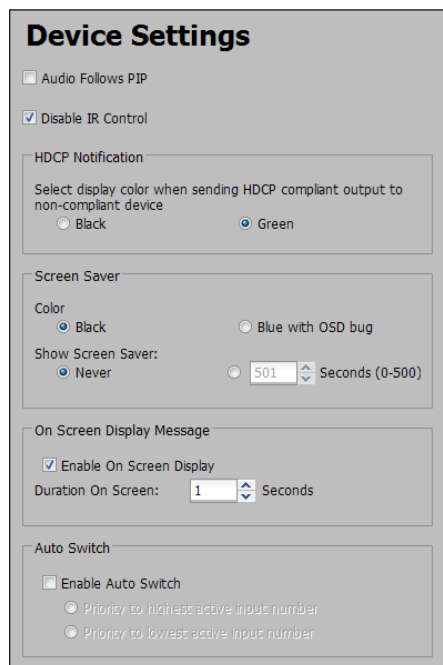


Figure 54. Device Settings Page

To set audio to follow the PIP input, select the **Audio Follows PIP** check box.

To set audio to follow the main input, clear the **Audio Follows PIP** check box.

To disable IR control, select the **Disable IR Control** check box.

To re-enable IR control, clear the **Disable IR Control** check box.

HDCP Notification

HDCP notification indicates if HDCP content restrictions are preventing a video signal from passing.

When the **Green** option is selected, a green screen with HDCP CONTENT text is displayed on the output if the connected device is not HDCP compliant and an HDCP input has been selected.

When the **Black** option is selected, the output mutes to black if the connected device is not HDCP compliant and an HDCP Authorized input with protected content has been selected.

To select the display color select the **Black** radio button or **Green** radio button.

Screen Saver Settings

When no active video is detected on the selected input, the screen saver mode is activated. The output sync can be disabled after a user-set duration, which allows display devices to go into a low power, standby state.

To set the screen saver options:

1. Click the **Black** (default) or the **Blue with OSD bug** radio buttons to enable the desired screen saver background color.
 - **Black** — Mutes the video output to black for a set duration before disabling the output sync.
 - **Blue with OSD bug** — Displays a blue background with a moving OSD bug that indicates “DVS 605: Input X No Signal” for a set duration before disabling the output sync.
2. Adjust the duration of the screen saver to either:
 - a. No screen saver (never disable output sync), by clicking the **Never** radio button; or
 - b. To a user-defined duration (1-500 seconds), by clicking the radio button for the duration field and then click the up ▲ and down ▼ arrows. Alternatively enter a value in this field.

NOTE: Setting this value to 0 disables the output sync immediately when no active input is detected.

On Screen Display Message

When the selected On Screen Display message shows the name of the current input and the detected input signal. The message is displayed for a user-defined duration (1-501 seconds) after an input switch.

To set the On Screen Display to display messages:

1. Select the **Enable On Screen Display** check box.
2. Adjust the duration that messages are displayed on screen, click the up ▲ and down ▼ arrows, or enter a value in the **Duration on Screen** field.

NOTE: Setting this value to zero disables the On Screen Display Message.

To disable the On Screen Display message, clear the **Enable On Screen Display** check box or set the duration to zero.

Auto Switch

When enabled, the auto-input switching priority can be set to either start with the highest active input or the lowest active input.

To enable auto-input switching:

1. Select the **Enable Auto Switch** check box.
2. Select the desired priority option radio button. **Either:**
 - a. Priority to highest active input number, or:
 - b. Priority to lowest active input number.

To disable the auto-input switching option clear the **Enable Auto Switch** check box.

Hardware Pages

Click on the Hardware tab  to open these pages.

The Hardware pages options are:

- Unit Information • Device Name • Connection • Firmware Loader • Exec/Power Mode
- Date and Time • Password • Reset Device

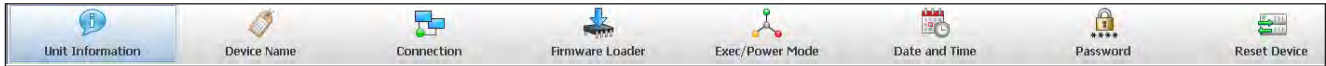


Figure 55. Global Navigation Bar for the Hardware Page

Unit Information Page

This page gives a non-configurable view of information about the connected unit. These include part number, model name and description, firmware version and build number, and the current internal temperature (in degrees F/C) of the connected device. In addition, the page gives access to third party licensing information.

Click on this button  to open the page.

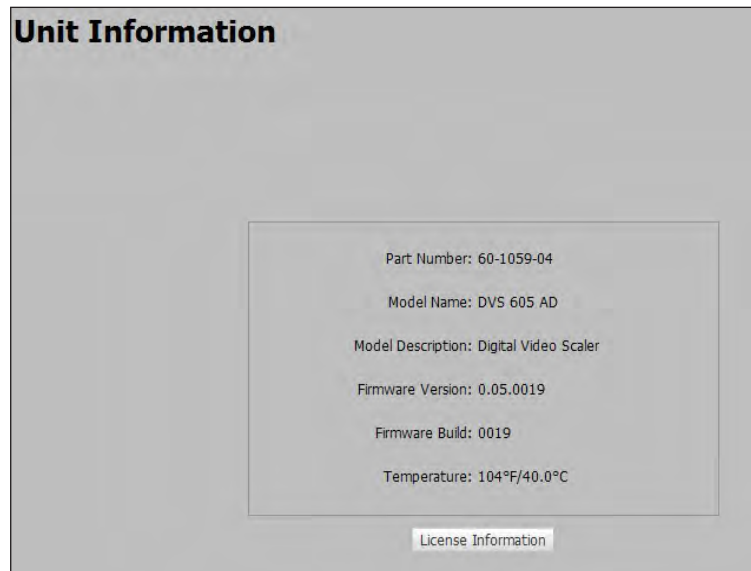


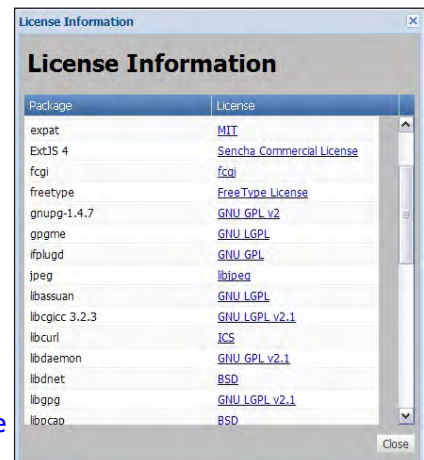
Figure 56. Unit Information Page

To view details about third-party packages and associated licensing, click the **License Information** button. The DVS 605 License Information dialog box opens.

To view a copy of a listed package license, click the link in the License column for the relevant package. This opens in a separate window a copy of the package license.

Click **Close** to close the License Information dialog box.

See the [Licensed Third-party Software Used in the DVS 605](#) table earlier in this guide for a list of the software used.



Device Name page

This page allows the user to assign or change the connected device name.

Click on this button  to open the page.



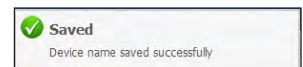
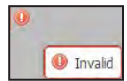
Figure 57. Device Name Page

To assign or change the name;

1. Enter a name for the device in the name field. This may be up to 24 alphanumeric characters in length with no spaces between characters. If an invalid name is entered, a red symbol appears to the right of the name field.

2. Click **Save**. If valid a confirmation box appears

To reset the name of the device, click **Reset** in the dialog box. A name must be entered, the name field cannot be left blank.



Connection Settings page

This page allows the user to adjust device settings for RS-232 and Ethernet connections.

Click on this button  to open the page.

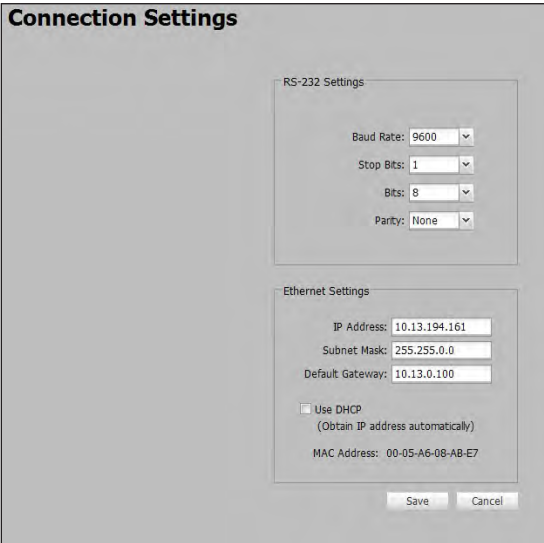


Figure 58. Connection Settings Page

RS-232 Settings

To configure the RS-232 settings:

1. From the **Baud Rate** drop-down list, select the appropriate baud rate.
2. From the **Stop Bits** drop-down list, select the number of bits used to indicate a byte.
3. From the **Bits** drop-down list, select the number of data bits to transmit.
4. From the **Parity** drop-down list, select the parity checking type.
5. Click **Save**

Ethernet Settings

NOTE: The default setting is DHCP set to On.

To configure the Ethernet settings for use with DHCP:

1. In the Ethernet Settings section, select the **Use DHCP** check box.
2. Click **Save**. Depending on your IT administrator, an IP address is automatically assigned to the device.

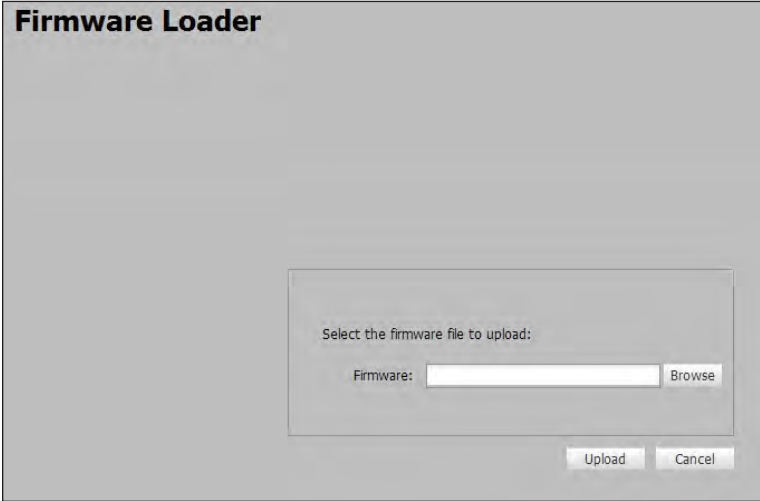
To configure the Ethernet settings with a static IP address:

1. In the **IP Address** field, enter an IP address for the device.
2. In the **Subnet Mask** field, enter the subnet mask for the device.
3. In the **Default Gateway** field, enter the default gateway to be used.
4. Click **Save**.

Firmware Loader page

This page allows the user to update the device firmware.

Click on this button  to open the page.



Firmware Loader

Select the firmware file to upload:

Firmware:

Figure 59. Firmware Loader Page

To update the device firmware:


1. Click **Browse**. The Choose File to Upload dialog box opens.
2. Browse to and select the firmware file to upload to the device. Valid firmware files have an EFF or ESF extension.

NOTE: Current firmware updates can be downloaded from the Firmware Download Center page of the Extron website. This file downloads onto your PC

3. Click **Open**. This closes the dialog box and returns you to the Firmware Loader screen.
4. Click **Upload**. An indicator displays the status and completion of the upload. The device reboots after upload is complete. After upload is complete, the device restarts.
5. Reconnect any previously connected devices such as a PC or control device.

Executive/Power Mode Page

This page allows the user to set the executive mode and power mode for the device. The video and sync can also be muted so the connected displays can go into a standby state.

Click on this button  to open the page.

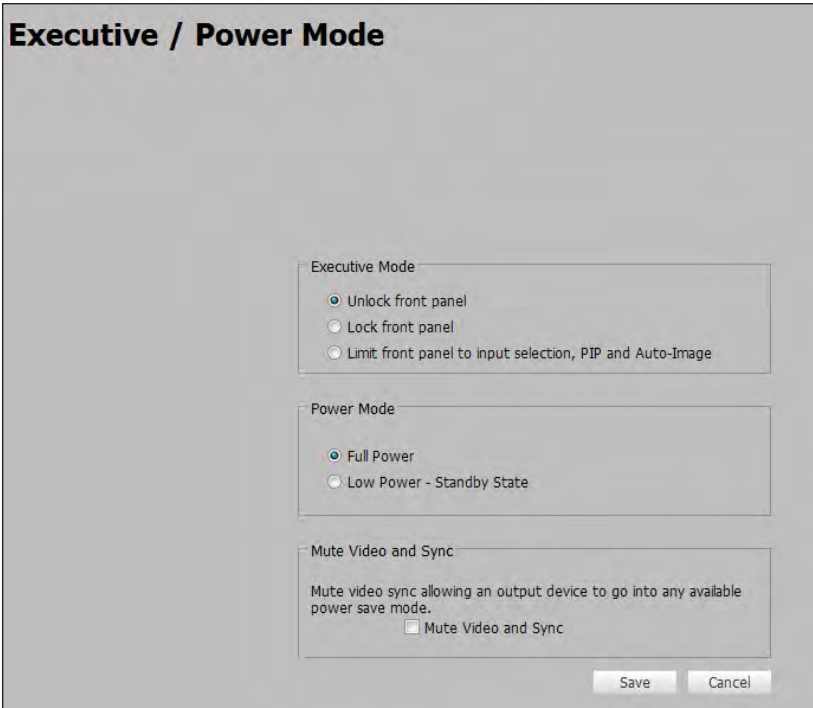


Figure 60. Executive/Power Mode Page

Executive Mode

Executive mode locks the front panel functions of the DVS 605, and there are three executive mode options available:

- Unlock front panel (default)
- Lock front panel
- Limit front panel to input selection, PIP, and Auto-Image

To set executive mode:

1. Click the radio button for the desired lockout option.
2. Click **Save**.

Power Mode

The low power-standby state disables all video input processing and all video outputs to save energy when the DVS 605 is not in use.

To set the power mode:

1. Click the radio button for the desired power mode (**Full Power** or **Low Power - Standby State**).
2. Click **Save**.

Mute Video and Sync

Muting the video and sync allows connected displays to go into a standby state.

To mute the video and sync:

1. Select the **Mute Video and Sync** check box.
2. Click **Save**.

To unmute the video sync:

1. Clear the **Mute Video and Sync** check box.
2. Click **Save**.

Date and Time Page

This page allows the user to set the date and time for the device.

Click on this button  to open the page.

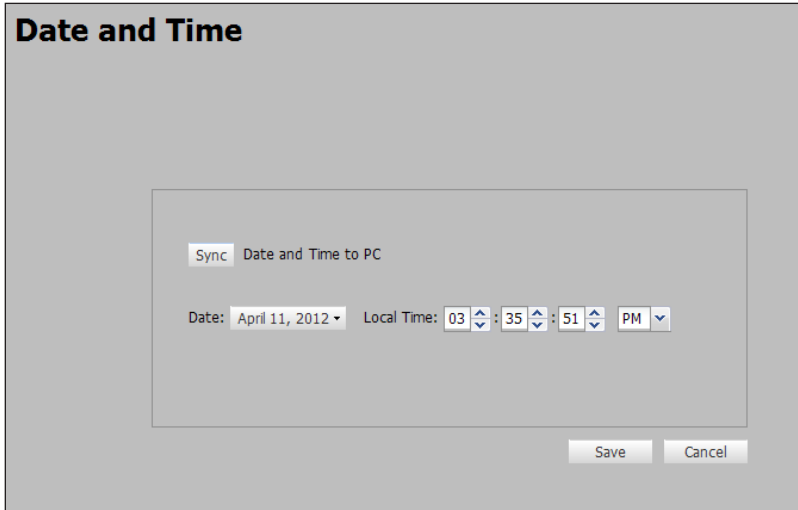


Figure 61. Date and Time Page

To set the date and time either click the **Sync** button to sync the device date and time to that of the connected PC, or manually adjust the date and time using the Date drop-down calendar and the Time field. Click **Save** when done.

Password Page

This page allows the user to set an administrator and user password on the device.

Click on this button  to open the page.

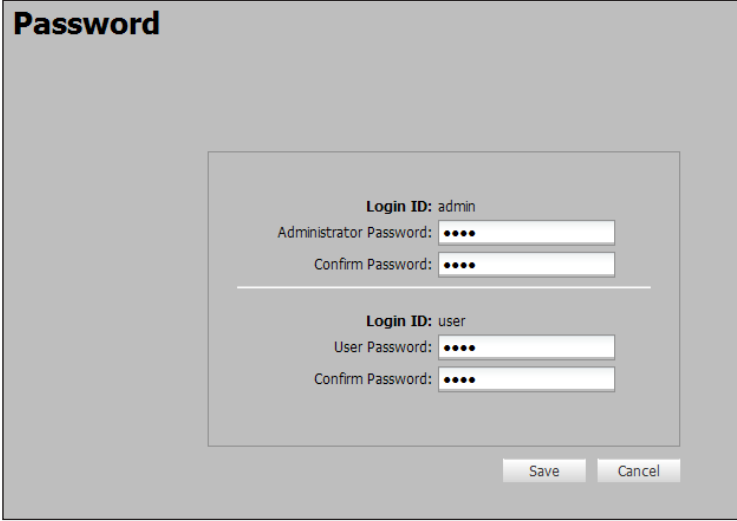


Figure 62. Password Page

Administrators and users can view any setting on the device. Administrators have the ability to make adjustments to any setting. Users can only make changes to the following:

- Input Selection • PIP Preset Recall • Auto-Image • PIP On/Off • User Preset Recall
- Auto + Fill • Auto + Follow • PIP Swap • Input Preset Recall • Aspect Ratio • Volume
- Audio Mute • Freeze • Video Mute

NOTE: If the DVS 605 is password-protected, a user name entry is required for connection. Enter *admin* for administrator-level access or *user* for user-level access. These user names must be entered in lowercase characters. After entering the appropriate user name, enter the associated password in the Password field.

To create or change an administrator password:

1. In the **Administrator Password** field, enter the desired administrator password.
2. In the **Confirm Password** field, re-enter the administrator password.
3. Click **Save**.

To create the user password:

NOTE: User password cannot be set until an administrator password has been entered.

1. In the **User Password** field, enter the desired user password.
2. In the **Confirm Password** field, re-enter the user password.
3. Click **Save**.

NOTE: When passwords are set, a notification to close and restart the browser appears.

Reset Device Page

This page allows the user to reset the device.

Click on this button  to open the page.



Figure 63. Password Page

There are three reset options available:

- Reset scaler settings to default (Retains IP)
- Reset scaler settings, and delete user files (Retains IP)
- Reset scaler settings, delete user files, and reset IP settings

Depending on the selected reset option, different settings are cleared.

Reset scaler settings to default (Retains IP) — Resets the settings associated with input settings, the output image, EDID, PIP, and audio, and also includes presets and auto memories, except Ethernet settings.

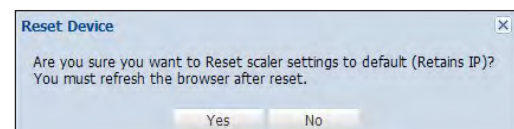
NOTE: Ethernet settings include the IP address, subnet mask, gateway IP address, device name, DHCP setting, and port mapping.

Reset scaler settings, and delete user files (Retains IP) — Resets all settings on the device to factory defaults (deletes user files), except the Ethernet settings.

Reset scaler settings, delete user files, and reset IP settings — Resets all settings on the device to factory defaults (deletes user files) including the Ethernet settings. Ethernet settings will default to DHCP set to On

To reset the device:

1. Click the radio button of the desired reset option.
2. Click **Reset**. A confirmation dialog box opens.
3. In the dialog box, click **Yes** to continue with the reset, or **No** to abort the reset.



Reference Material

This section provides information about:

- [Specifications](#)
- [Part Numbers and Accessories](#)

Video input

Number/signal type	2 RGBHV, RGBS, RGsB, RGBcV, component video (YUVi or YUVp/HDTV), S-video, composite video 3 HDMI digital video (HDCP compliant)
Connectors	2 female 15-pin HD: RGB, component video, S-video, composite video 3 female HDMI type A: HDMI
Nominal level	1 Vp-p for Y of component video and S-video, and for composite video 0.7 Vp-p for RGB and for R-Y and B-Y of component video 0.3 Vp-p for C of S-video
Minimum/maximum levels.....	Analog: 0.0 V to 1.0 Vp-p with no offset
Impedance	75 ohms
Horizontal frequency.....	15 kHz to 100 kHz
Vertical frequency.....	24 Hz to 120 Hz
Resolution range	640x480 to 1920x1200*, 480p, 576p, 720p, 1080i, 1080p, 2048x1080 sampled pixel for pixel *reduced blanking
Return loss	>30 dB @ 5 MHz
DC offset (max. allowable)	0.5 V

Video processing

Decoder	12 bit digital (3D-adaptive comb filter)
Analog sampling	12 bits per color; 13.5 MHz standard (video) 170 MHz standard (RGB)
Digital pixel data bit depth	8, 10, or 12 bits per channel; 3 channels for HDMI
Colors	1 billion (10 bit processing)

Video output

Number/signal type	
DVS 605, DVS 605 A	1 scaled RGBHV, RGBS, RGsB, or component video (YUVp/HDTV) 1 HDMI digital video (HDCP compliant)
DVS 605 D, DVS 605 AD	1 scaled RGBHV, RGBS, RGsB, or component video (YUVp/HDTV) 1 HDMI digital video (HDCP compliant) (1) 3G-SDI or HD-SDI with genlock and loop through
Connectors	
DVS 605, DVS 605 A	1 female 15-pin HD: RGB or component video 1 female HDMI: HDMI
DVS 605 D, DVS 605 AD	1 female 15-pin HD: RGB or component video 1 female HDMI: HDMI 3 female BNC: (1) 3G-SDI and HD-SDI, 1 genlock, and 1 genlock loop-through
Minimum/maximum levels.....	0.0 V to 1.0 Vp-p for Y of component video and for G of RGsB 0.0 V to 0.7 Vp-p for RGB and for R-Y and B-Y of component video
Impedance	75 ohms
Return loss	>21 dB @ 5 MHz
DC offset	±300 mV max.

Scaled resolution	640x480 ^{6,8,9} , 800x600 ^{6,8,9} , 852x480 ^{6,8,9} , 1024x768 ^{6,8,9} , 1024x852 ^{6,8,9} , 1024x1024 ^{6,8,9} , 1280x768 ^{6,8,9} , 1280x800 ^{6,8,9} , 1280x1024 ^{6,8,9} , 1360x765 ^{6,8,9} , 1365x768 ^{6,8,9} , 1365x1024 ^{6,8,9} , 1366x768 ^{1,2,3} , 1400x1050 ^{6,8} , 1440x900 ^{6,8,9} , 1600x900 ^{6,8} , 1600x1200 ^{6,8} , 1680x1050 ^{6,8} , 1920x1200 ^{6,8} HDTV 480p ^{7,8} , 576p ⁶ , 720p ^{3,4,5,6,7,8} , 1080i ^{6,7,8} , 1080p ^{1,2,3,4,5,6,7,8} , 2048x1080 ^{1,2,3,4,5,6,7,8} ¹ = at 23.98 Hz, ² = at 24 Hz, ³ = at 25 Hz, ⁴ = at 29.97 Hz, ⁵ = 30 Hz, ⁶ = at 50 Hz, ⁷ = at 59.94 Hz, ⁸ = at 60 Hz, ⁹ = at 75 Hz
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Sync

Input type	RGBHV, RGBS, RGsB, RGBcV, bi-level or tri-level component video
Output type	RGBHV, RGBS, RGsB, and bi-level or tri-level component video
Standards	Input: NTSC 3.58, NTSC 4.43, PAL, SECAM Output: SMPTE 242M, SMPTE 424M, SMPTE 292M, SMPTE 293M, SMPTE 295M
Input level	2.75 V to 5.0 Vp-p for RGBHV or RGBS 0.6 Vp-p for component video tri-level sync 0.3 Vp-p for component video bi-level sync or RGsB
Output level	TTL: 5.0 Vp-p, unterminated
Input impedance	Horizontal: 75 ohms Vertical: 510 ohms
Output impedance	75 ohms
Max. input voltage	5 Vp-p
Polarity	Positive or negative (selectable)

Audio — DVS 605 A, DVS 605 AD

Gain	Unbalanced output: -6 dB; balanced output: 0 dB
Frequency response	Lineout: 20 Hz to 20 kHz, ± 0.05 dB
THD + Noise	Preamp: <0.110% @ 1 kHz, 20 kHz bandwidth, at maximum output level Lineout: <0.025% @ 1 kHz, 20 kHz bandwidth, at maximum output level
S/N at maximum power output (unweighted)	Preamp: 90 dB at rated maximum output Lineout: 90 dB at rated maximum output
Crosstalk	Preamp: -80 dB @ 1 kHz, fully loaded Lineout: -80 dB @ 1 kHz, fully loaded
Stereo channel separation	84 dB @ 1 kHz

Audio input — DVS 605 A, DVS 605 AD

Number/signal type	5 stereo, balanced/unbalanced 3 stereo, de-embedded from HDMI (2-channel, PCM only)
Connectors	(5) 3.5 mm captive screw connector, 5 pole 3 female HDMI type A
Impedance	>10k ohms unbalanced, DC coupled
Nominal level	+4 dBu (1.23 Vrms), -10 dBV (316 mVrms)
Maximum level	+21 dBu, (unbalanced)
Input gain adjustment	-53 dB to +9 dB, adjustable per input

NOTE: 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV \approx 2 dBu

Audio output — DVS 605 A, DVS 605 AD

Number/signal type	Stereo/mono, balanced/unbalanced
Fixed output	1 analog 1 S/PDIF digital audio 1 HDMI embedded 1 optional 3G-SDI or HD-SDI embedded
Variable output	1 analog
Connectors	(2) 3.5 mm captive screw connectors, 5 pole 1 female RCA (S/PDIF) 1 female HDMI type A (shared with HDMI video) 1 optional female BNC (shared with 3G-SDI or HD-SDI video)

Impedance	50 ohms unbalanced, 100 ohms balanced
Gain error	±0.25 dB channel to channel
Maximum level (Hi-Z).....	>+21 dBu, balanced; >+11 dBu, unbalanced
Output volume range.....	0 dB to -100 dB in 1.0 dB increments

Control/remote — Scaler

NOTE: The front panel USB port and rear panel RS-232 port are independent of each other and can be used at the same time.

Serial control port.....	1 bidirectional RS-232: 1 rear panel 3.5 mm captive screw connector, 5 pole (uses 3 poles)
Baud rate and protocol.....	9600 (default) to 115200 baud, 8 data bits, 1 stop bit, no parity
Serial control pin configurations	1 = Tx, 2 = Rx, 3 = GND, 4 = GND, 5 = modulated IR input
USB control ports	1 front panel female mini USB B
USB standards	USB 2.0, high speed
Ethernet control port.....	1 female RJ-45 connector
Ethernet data rate	10/100Base-T, half/full duplex with autodetect
Ethernet protocol	ARP, ICMP (ping), IP, TCP, UDP, DHCP, HTTP, Telnet
Ethernet default settings	Link speed and duplex level = autodetected DHCP = on
Web server	Up to 200 simultaneous sessions 40 MB nonvolatile user memory
Contact closure	1 rear panel 3.5 mm captive screw connector, 5 pole
Contact closure pin configurations	Pins 1, 2, 3, 4, 5 = inputs 1, 2, 3, 4, 5
IR remote control	Rear panel captive screw connector (shared with RS-232, uses 2 poles): 38 kHz, hardwired, modulated TTL level (0 to 5 V) infrared up to 1 MHz
Program control	Extron control/configuration program for Windows® Extron Simple Instruction Set (SIS™) Microsoft® Internet Explorer®, Telnet

General

Power supply.....	Internal Input: 100-240 VAC, 50-60 Hz
Power consumption	
Full load.....	28.0 watts
Quiescent	20.1 watts
Standby	14.6 watts
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling	Fan, air flows from right to left (as viewed from front panel)
Thermal dissipation	
Full load.....	95.1 BTU/hr
Quiescent	68.1 BTU/hr
Standby	49.3 BTU/hr
Mounting	
Rack mount	Yes, with included brackets
Enclosure type.....	Metal
Enclosure dimensions	1.75" H x 17.5" W x 10.5" D (1U high, full rack wide) (4.4 cm H x 44.4 cm W x 26.7 cm D) (Depth excludes connectors and knobs. Width excludes rack ears.)
Product weight	
DVS 605	4.9 lbs (2.2 kg)
DVS 605 D.....	5.1 lbs (2.3 kg)
DVS 605 A.....	5.3 lbs (2.4 kg)

DVS 605 AD	5.4 lbs (2.5 kg)
Shipping weight.....	11 lbs (5 kg)
DIM weight.....	12 lbs (6 kg)
Vibration	ISTA 1A in carton (International Safe Transit Association)
Regulatory compliance	
Safety	CE, c-UL, UL
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI
Environmental.....	Complies with the appropriate requirements of RoHS, WEEE.
MTBF	30,000 hours
Warranty.....	3 years parts and labor

NOTE: All nominal levels are at $\pm 10\%$.

NOTE: Specifications are subject to change without notice.

Part Numbers and Accessories

Included Parts

Description	Part Number
Models	
DVS 605	60-1059-01
DVS 605 A	60-1059-02
DVS 605 D	60-1059-03
DVS 605 AD	60-1059-04
Rubber feet (not attached) (4)	
Rack and through-desk mounting kit (with A and AD models)	70-077-03
IEC power cord (1)	
<i>DVS 605 Setup Guide</i>	

Extron Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:

Extron Electronics
1001 East Ball Road
Anaheim, CA 92805
U.S.A.

Japan:

Extron Electronics, Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe and Africa:

Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:

Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Asia:

Extron Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363
Singapore

Middle East:

Extron Middle East
Dubai Airport Free Zone
F12, PO Box 293666
United Arab Emirates, Dubai

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or if modifications were made to the product that were not authorized by Extron.

NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA: 714.491.1500 or 800.633.9876

Europe: 31.33.453.4040

Asia: 65.6383.4400

Japan: 81.3.3511.7655

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

Extron Headquarters +1.800.633.9876 (Inside USA/Canada Only) Extron USA - West +1.714.491.1500 +1.714.491.1517 FAX	Extron Europe +800.3987.6673 (Inside Europe Only) Extron USA - East +1.919.850.1000 +1.919.850.1001 FAX	Extron Asia +800.7339.8766 (Inside Asia Only) +65.6383.4400 +65.6383.4664 FAX	Extron Japan +81.3.3511.7655 +81.3.3511.7656 FAX	Extron China +4000.398766 Inside China Only +86.21.3760.1568 +86.21.3760.1566 FAX	Extron Middle East +971.4.2991800 +971.4.2991880 FAX	Extron Korea +82.2.3444.1571 +82.2.3444.1575 FAX	Extron India 1800.3070.3777 Inside India Only +91.80.3055.3777 +91.80.3055.3737 FAX
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